SAMPLING AND ANALYSIS PLAN

LIVINGSTON MEMORIAL HOSPITAL
504 SOUTH 13TH STREET
LIVINGSTON, PARK COUNTY, MONTANA

TARGETED BROWNFIELDS ASSESSMENT

Prepared for
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 8

Prepared by
WESTON SOLUTIONS, INC.
Region 8 Superfund Technical Assessment and Response Team

April 2018

Project Dates of Sampling:	4/17/2018 – 4/18/2018
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Contract No.:	EP-S8-13-01
Technical Direction Document No.:	0003/1802-06
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GROUP A: PROJECT MANAGEMENT

A1. Title and Approval Sheet

Technical Directive Document (TDD): 0003/1802-06
Plan Title: Sampling and Analysis Plan (SAP) for Livingston Memorial Hospital Targeted Brownfields Assessment (TBA)
Date (Revision, if necessary): 4/9/2018 (Rev. 3)
Prepared By: Weston Solutions, Inc. (WESTON) Superfund Technical Assessment and Response Team (START)

The undersigned approves the entire Unified Federal Program (UFP)-Quality Assurance Project Plan (QAPP) document that includes this SAP and other elements that are found in the Region 8 Brownfields Program QAPP.

Lead Investigative Organization's Project Team Leader (PTL):
Michael Cherny/START PTL
Printed Name/Title
Signature/Date — ***4/13/2018***

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Environmental Protection Agency (EPA)

Work Assignment Manager (WAM)/ Delegated Approval Officer (DAO):
Stephanie Shen/EPA WAM and DAO
Printed Name/Title
Signature/Date — 4/13/2018

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A2. Table of Contents

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ATTACHMENTS

A3. Distribution List

Name	Title/Role	Organization
Stephanie Shen	WAM	EPA
Heather McMilin	TBA Applicant	Homeword, Inc.
Natalie Quiet	PM	START
Michael Cherny	PTL/Asbestos and Lead-based Paint (LBP) Inspector	START
Elliott Petri	Project Engineer/ Asbestos and LBP Inspector	START

A4. Project/Task Organization

The project team organization is illustrated on the Worksheet 3 & 5 chart included in Attachment A. Brief biographies of key START technical staff are provided in the following table:

Natalie Quiet		
Project Title / Role	**Education / Experience**	**Special Training / Certifications**
PM / Operational point of contact for project level communications with EPA WAMs, ensure performance associated with the contract, coordinate and communicate with EPA in the pre-planning phase of individual TDD assignments, provide technical direction to PTL, and support any functions delegated by the Program Manager.	Bachelors of Science (B.S.), Natural Resource Management / Over 12 years of experience conducting site assessments, Phase I/II Environmental Site Assessments (ESAs), Preliminary Assessment (PA)/Site Inspections, Remedial Investigation/Feasibility Study (RI/FS), and remedial design activities at Comprehensive Environmental Response, Compensation, and Liability Act sites. Experience includes preparation of QAPPs, SAPs, and reporting documents.	• 40-Hour Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) Training • 8-Hour OSHA Refresher Training • Federal Emergency Management Agency Incident Command System Levels 100, 200, 300, 400, 700, and 800 • Niton X-Ray Fluorescence (XRF) Spectrum Analyzer Training • First Aid, Cardio Pulmonary Resuscitation (CPR), and Automated External Defibrillator (AED) • 24-Hour Asbestos Hazard Emergency Response Act (AHERA)
Michael Cherny		
Project Title / Role	**Education / Experience**	**Special Training / Certifications**
PTL / Supervises field sampling and coordinates all field activities. Ensures all training/certifications are satisfied for field team personnel.	B.S., Environmental Chemistry / over two years of project experience including site assessments, removals, technical report documentation, and field instrument proficiency.	• 40-Hour OSHA HAZWOPER Training • 8-hour OSHA Refresher Training • AHERA Asbestos Inspector Accreditation • Montana Asbestos Inspector Accreditation (MTA-4838, exp. 1/9/2019) • EPA LBP Activities Inspector Certification • First Aid and CPR

Elliott Petri, P.E.		
Project Title / Role	**Education / Experience**	**Special Training / Certifications**
Engineer / Assist PTL with conducting sampling during field sampling event.	M.S. Environmental Science and Engineering / 8+ years of project experience including conducting site assessments, removals, technical report documentation, field instrument proficiency, LBP and Asbestos Containing Materials (ACM) sampling.	• 40-Hour OSHA HAZWOPER Training • 8-hour OSHA Refresher Training • AHERA Asbestos Inspector Accreditation • Montana Asbestos Inspector Accreditation (MTA-4704, exp. 12/20/2018) • EPA LBP Activities Inspector Certification • First Aid and CPR

A5. Problem Definition/Background

Problem Definition

This Phase II ESA has been requested to determine the presence and/or extent of contaminants, if present, in order to facilitate redevelopment of the Site (Figure 1). The TBA applicant is interested in identifying any contamination present at the Site prior to the redevelopment of this property. Based on observations made during the site reconnaissance, a previous asbestos inspection, and the age of the buildings, hazardous building materials are known and/or suspected to be present at the site.

Background Information

The Site currently features four buildings: Livingston Memorial Hospital (built in 1950 with additions in 1987 and 1989), Home Oxygen Building (built in 1960), Mental Health Building (built in 2004), and a shed (construction date unknown). Based on the findings of the Phase I ESA (WESTON, 2018), the Site was utilized as a hospital since 1955. Between 2015 and 2017, a local developer purchased the property and performed a partial demolition inside the hospital. An Asbestos Survey was also performed on the hospital building, which identified the presence of asbestos in building materials and debris in the crawlspaces. A copy of that survey is included in Attachment C. The Site is 2.571-acres and is located on the southwest side of Livingston, Montana (MT) (Figure 1). Due to the dates of construction, only the Livingston Memorial Hospital, Home Oxygen Building, and shed will be assessed as part of this Phase II ESA.

Project Objectives

This Phase II ESA will be conducted in accordance with ASTM, International (ASTM) E1903-11. The purpose of a Phase II ESA is to achieve the objectives set forth in the Statement of Objectives (SOO) developed by the user(s) and the Phase II Assessor. Goals for this Phase II ESA are to acquire and evaluate sufficient information to determine the location and concentration of potential environmental contamination at the Site, if present. The project objectives/SOO determined for the Site were as follows:

- To further refine the extent of ACM identified in the previous asbestos inspection, to address data gaps, and to investigate the potential presence of other environmental contamination;

- Conduct dust wipe sampling to evaluate the potential migration of known asbestos fibers from the crawlspace areas;
- Assess and evaluate on-site buildings for LBP.
- Assess and evaluate potential lead impacts to surface soils at the Site, if exterior LBP is identified on the buildings and bare soils are present beneath the LBP;
- Determine extent of lead lined construction materials;
- Conduct visual inspections of on-site buildings to determine presence/absence of PCB-containing equipment, mercury-containing equipment, and mold;
- Develop sufficient information to render a reasonable professional opinion whether hazardous substances either are or are not present at the Site with respect to the potential concerns assessed. If present, include concentrations of hazardous substances based on field screening and/or laboratory analysis of samples;
- Gather and provide sufficient data to assist the TBA recipient in making informed decisions with regard to the future use of the property; and
- Obtain sufficient data to support conceptual remediation cost estimating, if necessary.

Note: Asbestos dust wipe samples collected will be for informational purposes only (presence/absence) and will not be valid for any future assessment and/or remediation activities.

Regulatory Information

Results of field screening and laboratory samples analyzed as part of this investigation will be compared against the following regulatory benchmarks.

Lead in Surface Soils

- EPA Regional Screening Levels (RSLs) – Generic Tables (November 2017) Residential (400 mg/kg) and Industrial (800 mg/kg) Soil: Target Cancer Risk (TR) = 1E-6 and Target Hazard Quotient (THQ) = 1.0 (EPA, 2017)
- Though not a current benchmark required for comparison, Montana Department of Environmental Quality (MT DEQ) anticipates the EPA to update the Integrated Exposure Uptake Biokinetic (IEUBK) model to reflect a 5 micrograms per deciliter (µg/dl) blood lead level endpoint, which correlates to an associated lead value of 153 milligram per kilogram (mg/kg) that is used by the State of Montana.

ACM

- **AHERA and Asbestos-Containing Materials in Schools Rule (40 Code of Federal Regulations [CFR] Part 763, Subpart E)** - ACM is defined as any material containing more than one percent (1%) asbestos.

LBP

- **U.S. Department of Housing and Urban Development (HUD) Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (2012 Edition)** - The HUD benchmark for LBP is greater than or equal to 1.0 milligrams per centimeter square ($\geq$1.0 mg/cm^2).

A6. Project/Task Description

Field Tasks

Based upon the SOO developed, the following fieldwork tasks will be performed to assess potential contamination concerns at the Site. Additional details are presented in Section B1. Sampling Process Design (Experimental Design).

1) **Hazardous Building Material Assessments**
   - Conduct an ACM survey that will include collection of suspect material samples for laboratory analysis. A data gap survey will be performed for the Livingston Memorial Hospital and a full inspection will be necessary for the Home Oxygen Building and shed.
   - Conduct a LBP survey that will include collection of XRF readings. Paint chip samples will only be collected for laboratory analysis if an "inconclusive" result is registered by the XRF.
   - Conduct visual inspections to identify the presence or absence of polychlorinated biphenyl (PCB)-containing equipment (e.g., fluorescent light ballasts, electrical transformers, etc.), mercury-containing equipment (e.g., thermostat switches), and mold. Extent of visual inspections will be limited to areas visually observable, easily accessible, and deemed safe to enter by the field team.
2) **Asbestos Fiber Migration Assessment**
   - Conduct dust wipe sampling around the crawl space openings and areas in the building near the openings to evaluate the presence or absence of asbestos fibers which may have migrated from the crawlspaces.
3) **Soil Sample Collection**
   - If exterior LBP is identified on the building and bare soils are present beneath the LBP, composite soil samples may be collected from the drip line (one to two feet from the building wall). Samples will be collected from 0-1 inch (in.) below ground surface (bgs). Composite samples will be screened using the XRF analyzer. If XRF screening indicates elevated results or paint chips are visible in the surface soils, additional XRF screening measurements and/or discrete/composite soil samples may be collected along the perimeter of the building to delineate horizontal extent and/or screened using the XRF from 1-6 inches bgs to screen vertical extent. Soil samples for laboratory analysis will be determined in the field by personnel based upon results of field screening. Soil samples collected for laboratory analysis will be sieved in the field, if dry, using a #60 mesh screen prior to analysis.
4) **Document Sample Locations**
   - Sample locations will be documented on a field map, in the logbook, and/or with a Global Positioning System (GPS) device, as appropriate.

Project Schedule and Deliverables

The project schedule for implementation and deliverables to be produced is presented on Worksheet 14 & 16 included in Attachment A.

A7. Quality Objectives and Criteria

The following are the Data Quality Objectives (DQOs) following the seven-step process.

1. State the Problem

The TBA applicant is interested in identifying any contamination present at the Site prior to the redevelopment of this property. Additional information is presented in Section A5. Problem Definition/Background – Problem Definition.

2. Goals of the Study	3. Information Inputs	4. Boundaries of the Study[a, b]
Identify location and concentration of ACM.	▪ Analytical results to characterize and/or delineate ACM in the building(s).	Interior and/or exterior of Livingston Memorial Hospital, Home Oxygen Building, and shed. Buildings presented in Figure 2.
Identify location and concentration of LBP.	▪ XRF measurements to characterize and/or delineate LBP in the building(s).	
Identify location and concentration of lead associated with LBP in the exterior surface soils of the buildings.	▪ XRF measurements and/or analytical results to characterize and/or delineate surface soil impacts around the building, if LBP is present.	
Identify location of contaminants of concern (COCs) associated with mercury- or PCB-containing equipment, or mold.	▪ Photographs and field notes documenting mercury-containing equipment, PCB-containing equipment, and/or mold.	
Identify location of friable asbestos fibers.	▪ Analytical results from dust wipe samples to determine presence/absence of asbestos fibers in the building near crawl space openings.	Interior of Livingston Memorial Hospital.

a. Site activities are scheduled to occur in April 2018.

b. Practical constraints on data collection: Site entry will be limited by site access agreements with the site owner and adjacent property owners whose land needs to be traversed to access the Site, as applicable. Field constraints may include equipment and sampling limitations due to weather conditions and accessibility due to debris present at the Site. Scheduling adjustments will be made if physical constraints on planned field events occur as well as for safety considerations. Areas deemed unsafe will not be entered or sampled. If any areas are determined to be too hazardous to access for sampling the location will be recorded in the field logbook and no sample(s) collected.

5. Develop the Analytical Approach

The analytical approach is presented in Sections A6. Project/Task Description, B1. Sampling Process Design (Experimental Design), and B4. Analytical Methods. All valid analytical results for each media sampled will be compared to the applicable screening benchmarks and/or regulatory criteria presented in Section A5. Problem Definition/Background – Regulatory Information.

6. Specify the Performance or Acceptance Criteria

- If contaminants at the Site are detected at levels below applicable benchmarks, then the redevelopment project can proceed.

- If contaminants at the Site are detected at levels equal to or greater than applicable benchmarks, then additional evaluation will be needed to determine if: 1) further assessment to characterize and/or delineate the extent of the contamination is needed, or 2) sufficient information was collected to estimate remediation costs prior to redevelopment.

Performance/measurement criteria for information to be collected is presented in Worksheet 12 included in Attachment A. Project action limits and laboratory detection limits for parameters of interest are presented in Worksheet 15 included in Attachment A. Assessment of data usability generated as part of this assessment is presented in Worksheet 37 included in Attachment A. An assessment of information obtained from other sources (e.g., previous studies, secondary data uses, etc.) used in this assessment for the acceptance criteria is included in References.

7. Develop the Detailed Plan for Obtaining Data

The detailed plan for obtaining data is presented in Group B: Data Generation and Acquisition.

A8. Special Training/Certification

Special Training / Certification information for key technical personnel is provided in Section A4. Project/Task Organization.

A9. Documents and Records

All records generated and verified by START personnel will be stored electronically on the WESTON server and backed up daily. All hard and electronic copies of finalized documents and technical project documents (including but not limited to the QAPP, Health and Safety Plan [HASP], etc.) will be retained by WESTON in accordance with Section H.20 of Contract No.: EP-S8-13-01. Other project-related files, such as contract documents, employee benefits, and other information will be retained in accordance with WESTON Policies and Procedures. Worksheet 29 included in Attachment A provides a listing of standard project documents and records. Anticipated deliverables to be generated are identified on Worksheet 14 & 16 in Attachment A.

GROUP B: DATA GENERATION AND ACQUISITION

B1. Sampling Process Design (Experimental Design)

Design Strategy and Sample Locations

The following table lists the environmental concerns present at the Site along with the associated design strategy of assessment techniques, sample type and specific information represented (e.g., size of the area, volume, or time period to be represented), estimated total number of samples to be collected, as applicable, and designation of sample information importance in relationship to the overall investigation.

Environmental Concern	Assessment Technique	Sample Type and Representation	Total # of Samples Collected	Sample Information Designation
ACM	ACM Survey	Sample Type: Bulk Building Materials Representation: Asbestos content of building materials	To be determined (TBD) (Pending results of visual inspection for suspect ACM present in building materials)	Critical
Asbestos	Dust Sampling	Sample Type: Ghost wipes Representation: Migration of friable asbestos from crawlspaces	TBD (Sample quantity to be determined by inspector based on field observations)	Informational
LBP	LBP Survey	Sample Type: XRF Instrument Readings Representation: Lead content of painted surfaces	Not applicable (N/A) (LBP sample only collected if XRF reading is "inconclusive")	Critical
Lead in Surface Soil	Surface Soil Sampling	Sample Type: XRF Instrument Readings and/or Composite soil samples Representation: Characterization of soils at the perimeter of buildings with exterior LBP.	TBD (As needed, based on XRF screening)	Critical (If present)
PCB-containing ballasts, Mercury-containing thermostat switches and mold	Visual Inspections	Sample Type: None Representation: Presence/non-presence of hazards in visually observable locations	None	Informational

Soil sample locations may be located on a site map or using a GPS device after sample collection to document sample locations selected in the field. If sampling locations become inaccessible, START

will attempt to identify alternate sampling locations that provide adequate or sufficient data as the original based upon the best judgment of the project team, as necessary.

A schedule of project activities is presented in Attachment A – Worksheet 14 & 16. All samples will be submitted to the appropriate laboratory within the hold time identified on Table 1.

B2. Sampling Methods

The following sections describe the project specific field Standard Operating Procedures (SOPs) and sampling methods to be utilized during the Site investigation.

SOP Number or Reference	Title, Revision, and Date	Originating Organization
2001	General Field Sampling Guidelines, Rev. 1.0, 06/07/13	U.S. EPA - Environmental Response Team (ERT)
2012	Soil Sampling, Rev. 1.0, 07/11/01	U.S. EPA - ERT
EPA, 2003	Superfund Lead-Contaminated Residential Sites Handbook, 8/2003	U.S. EPA
EPA/600/R-95/111	EPA SOP Procedure for the Laboratory Analysis of Lead in Paint, Bulk Dust, and Soil by Ultrasonic, Acid Digestion and Inductively Coupled Plasma Emission Spectrometric Measurement, 9/1997	U.S. EPA
HUD, 2012	Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing	U.S. Department of Housing and Urban Development (HUD)
2015	Asbestos Sampling, 11/17/94	U.S. EPA
2011	Chip, Wipe, and Sweep Sampling, Rev. 1.0, 08/25/15	U.S. EPA - ERT
2049	Investigation-Derived Waste Management, Rev. 0.1, 10/05/15	U.S. EPA - ERT
EPA, 1986	AHERA	U.S. EPA
EPA, 1985	"Asbestos in Buildings – Simplified Sampling Scheme for Friable Surfacing Materials"	U.S. EPA

Asbestos Survey

ACM Survey Methods

Visual inspections will include all areas of the buildings where an individual performing demolition or renovation operations may encounter ACM. Exact sample locations and the total number of samples will be based on AHERA standards (EPA, 1986) and the best professional judgment of the inspector. When conducting the room and compartment inspections, the inspector will visually survey the area to identify the location of all suspected ACM. Each potential location will be touched to determine if it is friable.

Collection Methods

Due to the differing future uses of the buildings, destructive sampling methods for the Livingston Memorial Hospital (building scheduled for complete remodel) and discrete (non-destructive) sampling methods for the Home Oxygen Building and shed (unknown uses) will be implemented to obtain a representative sample of the building materials. Personal protective equipment (PPE) for asbestos sampling will be addressed in the site-specific HASP. A wetting agent may also be applied to the surface being sampled to inhibit release of particulate matter into the air. Asbestos bulk samples will be randomly collected using the grid system described in the U.S. EPA publication "Asbestos in Buildings – Simplified Sampling Scheme for Friable Surfacing Materials" (EPA, 1985). Core samples will be collected wherever feasible. If ACM is suspected to be present within or underneath a surface that is impenetrable by a handheld coring device, then a drill, saw or other mechanical or physical means will be used to obtain a representative sample.

Sample Nomenclature

Sample nomenclature will begin with one of the following acronyms: LMH for Livingston Memorial Hospital, HOB for Home Oxygen Building or SH for the shed. This will be followed by the homogeneous material type identified, a two-digit homogeneous material number (example: first drywall homogeneous area [DW01]), and a two-digit sequential sample number. For example, LMH-DW01-07 would designate the seventh sample collected at the Livingston Memorial Hospital from the first drywall homogenous area identified. If property conditions warrant the modification of nomenclature, this change will be documented in the logbook.

Asbestos Sample Collection Summary Table

Sample Media	Sample Type	Sample Nomenclature
Building Materials	Bulk	LMH-XX##-## HOB-XX##-## SH-XX##-##

Dust Sampling

Collection Methods

Wipe samples will be collected using a pre-moistened ghost wipe and a 100 cm^2 template. Once the template is secured to the substrate, the sampler will use a side to side wiping technique. After the first pass, the wipe will be rotated 180° and the surface will be wiped in the reverse direction. The wipe will be folded and a top to bottom wiping method will be used. The wipe will be folded once more and the perimeter of the template will be wiped with a clean side. Lastly, the wipe will be folded again and placed into the provided sample container.

Dust samples will be collected in areas around the crawl space openings and associated rooms and may include floors, tables, or horizontal surfaces where asbestos fibers could potentially migrate as determined by the inspector.

Sample Nomenclature

Sample nomenclature will begin with the acronym: LMH for Livingston Memorial Hospital. This will be followed by WP for wipe, and a two-digit sequential sample number. For example, LMH-WP01 would designate the first wipe sample collected at the Livingston Memorial Hospital. If property conditions warrant the modification of nomenclature, this change will be documented in the logbook.

Dust Sample Collection Summary Table

Sample Media	Sample Type	Sample Nomenclature
Dust	Wipe	LMH-WP##

Lead-Based Paint Survey

LBP Survey Methods

A LBP survey of the buildings will be conducted using an XRF field instrument calibrated for the standard detection limits for performing LBP surveys. Field screening using XRF for LBP will be completed to determine the location and extent of LBP. Suitable sample locations should have adequate, non-faded, and unchipped paint. The survey will include XRF of lead lined construction materials present in the hospital.

XRF Reading Nomenclature

Nomenclature for XRF readings will be numbered in sequential order as determined by the XRF unit. The results of the XRF survey will be recorded on field sheets or the logbook and the locations noted on site plans.

Lead in Soil Sample Collection

Collection Methods

If LBP is identified on the exterior of the building through XRF screening and paint chips are visible in the surface soil, then a composite surface soil sample representative of the perimeter of the building will be collected from 0–1 in. bgs and screened with the XRF to identify any migration of lead to the soil. If screening results appear near or higher than 153 mg/kg, then a composite soil sample will be screened using the XRF 1-6 in. bgs to screen vertical extent. If a lead-in-soil evaluation is determined to be necessary, XRF screening will start at approximately one foot from the roof drip line of the building (12 in.–30 in.). If screening results appear near or higher than 153 mg/kg, additional horizontal XRF screening will be conducted in-situ to determine horizontal extents for assisting with soil quantities. Additional screening will be done in approximately 3-5-foot step outs from the building. Three screening locations will be equally spaced along the perimeter where elevated levels are found. If continuing elevated levels are found, additional step outs will be conducted at staggered points from the previous step out. Step out screening will occur until in-situ XRF lead levels are below 153 mg/kg. Confirmation samples for laboratory analysis will be collected pending the XRF screening results, if appropriate. Soil samples collected, if dry enough, will be sieved in the field using a #60 mesh screen following the procedures described in *U.S. EPA SOP Procedure for the*

Laboratory Analysis of Lead in Paint, Bulk Dust, and Soil by Ultrasonic, Acid Digestion and Inductively Coupled Plasma Emission Spectrometric Measurement (9/1997). If samples are too wet to sieve in the field, they will be air dried, or shipped to the laboratory for drying and sieving prior to analysis.

Soil sampling for asbestos in soils will not be conducted in the crawl spaces within the hospital building. These areas are known to contain friable ACM debris that is in contact with soils; therefore, asbestos contamination can be assumed to be present in soils within the crawl spaces.

Sample Nomenclature

Sample nomenclature will use the following to designate the property: LMH for Livingston Memorial Hospital, HOB for Home Oxygen Building or SH for the shed. This will be followed by the surface soil location number (SO##), a two-digit number for the top of depth range of the sample (in inches), and a two-digit number for the bottom of depth range of the sample (in inches). For example, LMH-SO03-0001 would designate the surface soil sample collected from location #3 from zero to one in. bgs.

Soil Sample Collection Summary Table

Sample Media	Sample Type	Sample Nomenclature
Surface Soil	Composite Sample	LMH-SO##-XXXX HOB-SO##-XXXX SH-SO##-XXXX

B3. Sample Handling and Custody

Asbestos Bulk and Wipe Samples

Personnel performing sample collection will use PPE appropriate to the hazard(s) presented and may include gloves, Tyvek, booties, hard hats, and/or high-efficiency particulate air (HEPA) respiratory protection. Sample locations will be recorded in a logbook, field sheet, and/or located on a floor plan. Samples will be double-bagged, labeled, and stored until delivery for laboratory analysis accompanied by chain-of-custody documentation. Samples will be delivered to the lab upon return the day of demobilization. All suspect friable and non-friable ACM will have a bulk sample collected for submission to a laboratory certified by the National Voluntary Laboratory Accreditation Program (NVLAP) for asbestos analyses. All dust wipe samples will be submitted to the same laboratory as the bulk samples.

Lead in Surface Soil Samples

Disposable gloves and plastic scoops will be used during sample collection procedures. Surface soil samples for lead analysis will be double-bagged, labeled, and stored until delivery for laboratory analysis, accompanied by chain-of-custody documentation. Samples will be delivered to the lab upon return the day of demobilization.

Decontamination Procedures

Sieve decontamination procedures are described in *U.S. EPA SOP Procedure for the Laboratory Analysis of Lead in Paint, Bulk Dust, and Soil by Ultrasonic, Acid Digestion and Inductively Coupled Plasma Emission Spectrometric Measurement* (9/1997). All non-disposable sampling equipment that contacts potentially contaminated soil or water will be decontaminated. Materials to be stored more than a few hours will be covered.

Investigative-derived Waste Management

Investigation-derived waste (IDW) will be managed in accordance with ERT SOP #2049 Investigation-Derived Waste Management. IDW anticipated to be generated during the investigation includes excess sample volume, disposable sampling equipment, used PPE, and decontamination fluids.

The EPA does not recommend the removal of wastes from all sites and, in particular, from those sites where IDW does not pose any immediate threat to human health or the environment (ERT SOP #2049). It is not anticipated that any wastes generated will require off-site disposal or long-term aboveground containerization. IDW generated will be returned to the area of concern (AOC) location where collected or containerized and properly labeled, if considered potentially hazardous. Per ERT SOP #2049, the on-site handling options for non-hazardous IDW are to double bag and deposit PPE and disposable equipment in the site or EPA dumpster, or in any municipal landfill.

B4. Analytical Methods

The following table lists the analytical parameters and primary COCs commonly associated with the concerns identified at the Site.

Sample Media	Analytical Parameters (Analytical Method)	Primary Contaminants of Concern
Building Materials	Asbestos (PLM Bulk and Point Count by EPA Method 600/R-93/116)	Chrysotile
		Amosite
		Actinolite/Tremolite
	LBP (XRF Instrument)	Lead in paint
Dust	Asbestos (Transmission Electron Microscopy [TEM])	Asbestos
Surface Soils	Lead (Atomic Emission Spectroscopy)	Lead

A complete list of analytes for the analytical methods along with project quantitation limits (PQLs), laboratory quantitation limits (LQLs), and laboratory detection limits (LDLs) is presented on Worksheet 15 included in Attachment A. A comprehensive summary of sample analytical

parameters, methods, containers, preservation requirements, QA/QC samples, and holding times is present in Table 1.

B5. Quality Control

The following table indicates the frequency of quality control activities for the project.

Quality Control Activity	Frequency
Soil Field Duplicates	1 per 10
Asbestos Duplicates	1 per 20
Blank	1 per media (wipe)
XRF Standardization	Prior to use, every four hours during use (as applicable), and following use to verify accuracy

Additional information regarding project-specific QC samples and proficiency testing samples is presented in Table 1 and Worksheet 12 in Attachment A.

B6. Instrument/Equipment Testing, Inspection, and Maintenance

START field personnel are responsible for the calibration of WESTON field equipment and field equipment provided by subcontractors. Documented and approved procedures will be used for calibrating measuring and testing equipment. Widely accepted procedures, such as those published by U.S. EPA and ASTM, or procedures provided by manufacturers in equipment manuals will be adopted. Information regarding specific equipment is included on Worksheet 22, 24, & 25 in Attachment A.

B7. Instrument/Equipment Calibration and Frequency

Instrument/Equipment calibration and frequency information is provided on Worksheet 22, 24, & 25 in Attachment A.

B8. Inspection/Acceptance of Supplies and Consumables

Supplies and consumables utilized for sample handling, custody and disposal are identified on Worksheet 26 & 27 included in Attachment A.

B9. Non-direct Measurements

Sources and types of secondary data useful for this project include but are not limited to the following:

- Historical Records
- Previous Investigations
- Regulatory Agency Files
- Topographic maps

- Historical Aerial Photographs
- Visual Site Reconnaissance
- Interviews

The project team will carefully evaluate the quality of secondary data to ensure they are of the type and quality necessary to support their intended uses. When evaluating the reliability of secondary data and determining limitations on their uses, the project team will consider the source of the data, the time period during which they were collected, data collection methods, potential sources of uncertainty, the type of supporting documentation available, and the comparability of data collection methods to the currently proposed methods. With respect to secondary analytical data that will be utilized to support critical decisions, such as comparison of contaminant levels with applicable standards, a detailed review of the data will be necessary to determine the usability of the data. Worksheet 13 in Attachment A provides details on the secondary data review process to be completed in accordance with EPA guidelines.

B10. Data Management

Field data will be recorded in the field logbook, field map(s), and or with a GPS device. Proper chain-of-custody procedures will be utilized for documenting and tracking analytical samples. All data will be captured in the project files for use in analysis and reporting. Other than chain-of-custody forms, no specific checklists or forms are required for this project. Attachment A includes Project documentation details on Worksheet 29 and Data Verification methods on Worksheet 35.

GROUP C: ASSESSMENT AND OVERSIGHT

C1. Assessments and Response Actions

Worksheet 31, 32, & 33 details the types of assessments, response actions and responsible parties. All reports will be prepared by START and distributed to the following to include but not be limited to the START PM, Program Manager and Delegated QA Manager, and the EPA COR, WAM, and/or DAO as applicable.

C2. Reports to Management

Reports to management include, but are not limited to, the following:

- Field audit
- Laboratory audit
- Field activities summary
- Project status calls/meetings
- Data validation report
- Data usability report

GROUP D: DATA VALIDATION AND USABILITY

D1. Data Review, Verification, and Validation

The following general steps will be followed to conduct a data usability assessment, which evaluates whether underlying assumptions used during systematic planning are supported, sources of uncertainty have been accounted for and are acceptable, data are representative of the population of interest, and the results can be used as intended, with the acceptable level of confidence:

- Step 1 – Review the project's objectives and sampling design.
- Step 2 – Review the data verification and data validation outputs.
- Step 3 – Verify the assumptions of the selected statistical method (if applicable)
- Step 4 – Implement the statistical method (if applicable).
- Step 5 – Document data usability and draw conclusions.

The data usability assessment is considered the final step in the data evaluation process. All data will be assessed for usability, regardless of the data evaluation/validation process implementation.

D2. Verification and Validation Methods

Data verification procedures are described on Worksheet 35 in Attachment A. Data validation procedures are described on Worksheet 36 in Attachment A.

D3. Reconciliation with User Requirements

For issues internal to the laboratory, the laboratory PM will be the responsible party for data resolution issues and will be responsible for conveying this information to the Delegated QA Manager or delegated authority. For external laboratory data and quality issues, the Delegated QA Manager or delegated authority will provide issue resolution information and will be the responsible party for conveying this information to data users. For quality documents, reports, and field information, the Delegated QA Manager, delegated authority, or other persons identified in the project team will be responsible for issue resolution of such items and will be the responsible party for conveying that information to data users.

REFERENCES

ASTM, 2011. E1903-11, *Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process*. West Conshohocken, Pennsylvania.

Citation	Reference Type	Assessment Factor				
		Soundness	Applicability and Utility	Clarity and Completeness	Uncertainty and Variability	Evaluation and Review
ASTM, 2011	Guidance	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

EPA, 2018. *TDD 0003/1802-06 "Livingston Memorial Hospital"*. February 2018

Citation	Reference Type	Assessment Factor				
		Soundness	Applicability and Utility	Clarity and Completeness	Uncertainty and Variability	Evaluation and Review
EPA, 2018	Guidance	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

EPA, *Regional Screening Levels (RSLs) – Generic Tables (November 2017)*. November 2017

Citation	Reference Type	Assessment Factor				
		Soundness	Applicability and Utility	Clarity and Completeness	Uncertainty and Variability	Evaluation and Review
EPA, 2017	Guidance	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

EPA, *Superfund Lead-Contaminated Residential Sites Handbook*. OSWER 9285.7-50. August 2003

Citation	Reference Type	Assessment Factor				
		Soundness	Applicability and Utility	Clarity and Completeness	Uncertainty and Variability	Evaluation and Review
EPA, 2003	Guidance	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

EPA, Asbestos Hazard Emergency Response Act of 1986, 40 CFR part 763, subpart E. October 1986.

Citation	Reference Type	Assessment Factor				
		Soundness	Applicability and Utility	Clarity and Completeness	Uncertainty and Variability	Evaluation and Review
EP6, 1985	Law	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

EPA, EPA's "Pink Book", *Asbestos in Buildings: Simplified Sampling Scheme for Friable Surfacing Materials*. (EPA 560/5-85-030a). October 1985

Citation	Reference Type	Assessment Factor				
		Soundness	Applicability and Utility	Clarity and Completeness	Uncertainty and Variability	Evaluation and Review
EPA, 1985	Guidance	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

Montana Department of Environmental Quality (MT DEQ), 2018. Remediation Division. Soil. Frequently Asked Questions. http://deq.mt.gov/Land/StateSuperfund/FrequentlyAskedQuestions. Accessed April 9, 2018.

Citation	Reference Type	Assessment Factor				
		Soundness	Applicability and Utility	Clarity and Completeness	Uncertainty and Variability	Evaluation and Review
MT DEQ, 2018	Website	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

WESTON. *Phase I ESA for Livingston Memorial Hospital 504 South 13th Street Livingston, Park County, Montana*. April 2018.

Citation	Reference Type	Assessment Factor				
		Soundness	Applicability and Utility	Clarity and Completeness	Uncertainty and Variability	Evaluation and Review
WESTON, 2018	Document	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

WESTON, 2015. Quality Assurance Project Plan for Region 8 Targeted Brownfields Assessment. Prepared for the START IV Contract. July 2013 - Last Revised 2015

Citation	Reference Type	Assessment Factor				
		Soundness	Applicability and Utility	Clarity and Completeness	Uncertainty and Variability	Evaluation and Review
WESTON, 2015	Document	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

TABLES

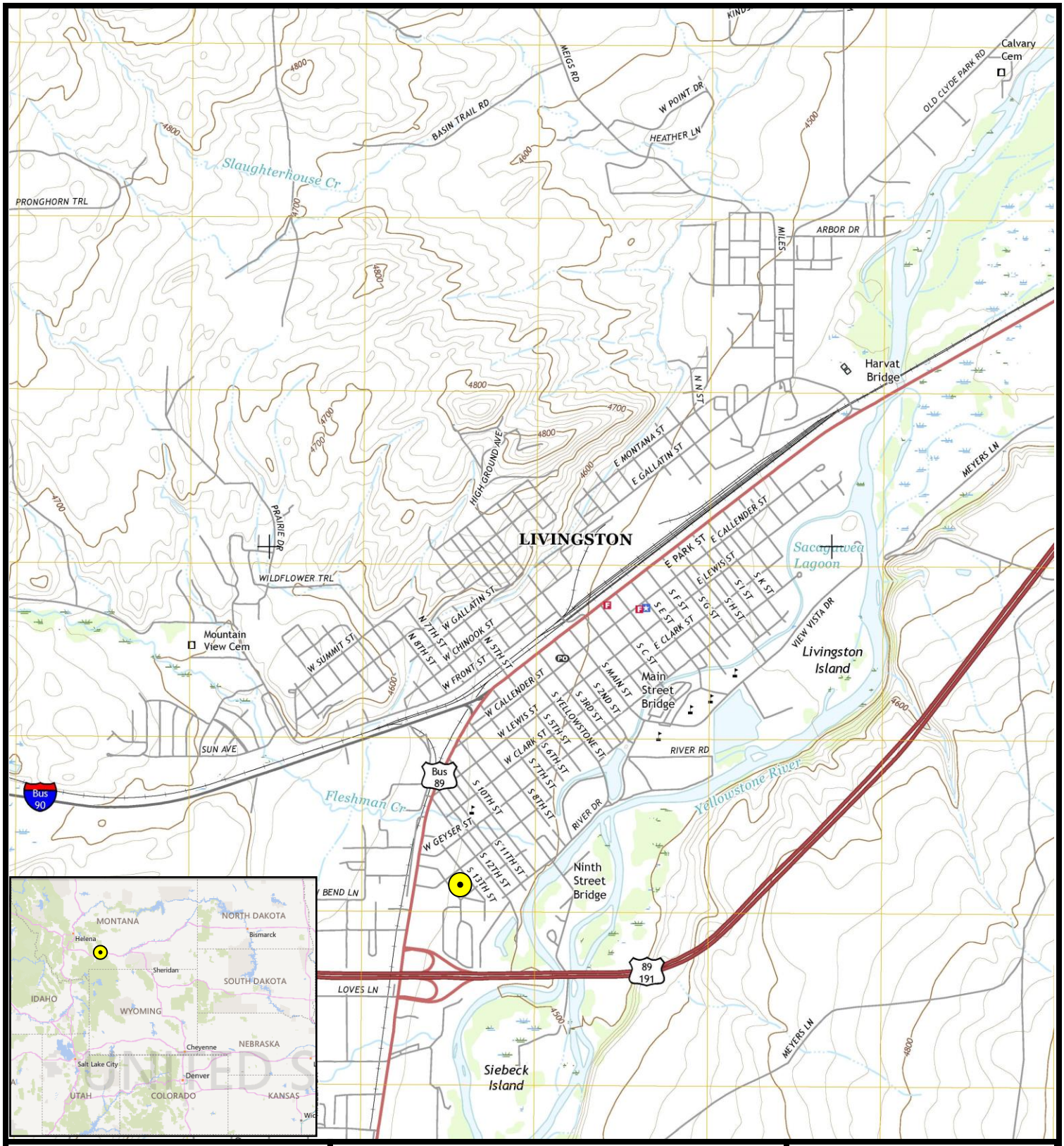
Table 1 - Sampling and Analysis Summary

Site: Livingston Memorial Hospital
WAM: Stephanie Shen
TDD: 0003/1802-06

Sample Locations	Sample Type	Sample ID	Depth	Analytical Parameters	Analytical Method	Containers (Numbers, Size, and Type)*	Preservation Requirements	Number of Samples	Number of Field Duplicates	Number of MS/ MSDs	Number of Blanks	Total Number of Samples to Lab[1]	Holding Time
Matrix: Bulk Materials													
Building Materials	Grab	LMH-XX##-### HOB-XX##-### and shed SH-XX##-##	N/A	Asbestos	EPA 600/R-93/116	1 Double Bagged Ziploc	N/A	TBD	1 per 20	N/A	N/A	TBD	N/A
Matrix: Dust													
Various	Grab	LMH-WP##	N/A	Asbestos	Asbestos by TEM	1 ghost wipe	N/A	10	N/A	N/A	1	11	N/A
Matrix: Lead in Soil Samples													
Building Exteriors	Grab	LMH-SO##-XXXX HOB-SO##-XXXX SH-SO##-XXXX	0-1 inch	Lead	Atomic Absorption Spectroscopy	1 Double Bagged Ziploc	Store @ < 4°C	TBD	1 per 10	N/A	N/A	TBD	180 Days

Notes:
[1] – Total number of samples to the laboratory does not include MS/MSD samples.
Equip. – Equipment
MS/MSD – Matrix Spike/Matrix Spike Duplicate
N/A – Not applicable
TBD – To be determined
* - Actual number, size, and type of jars and bottles to be used will be provided by the laboratory. Analytical methods may be combined and differ than shown in table. Verify sample sets when coolers received.

FIGURES



Legend

- Site Location (Approximate)

0 1,200 2,400 feet

N W E S

Prepared for:
U.S. EPA Region 8

Contract No.:
EP-S8-13-01

TDD:
1802-06

TO:
0003

Prepared By:
Weston Solutions, Inc.
START IV

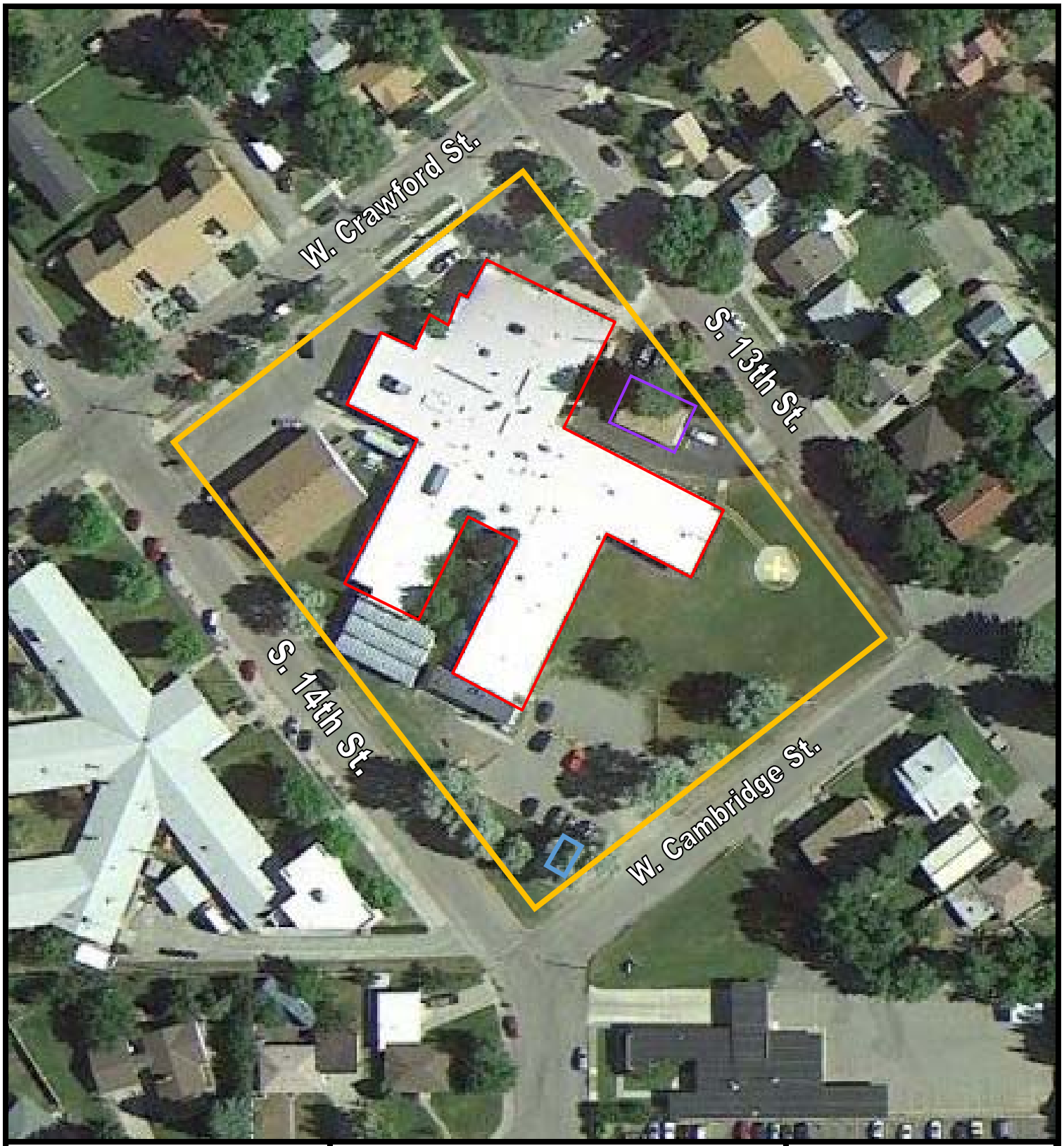
Suite 100
1435 Garrison Street
Lakewood, CO 80215

FIGURE 1

SITE LOCATION MAP

LIVINGSTON MEMORIAL HOSPITAL
LIVINGSTON,
PARK COUNTY, MONTANA

DATE: 3/8/2018



Legend

- Site Boundary
- Home Oxygen Building
- Livingston Memorial Hospital
- Maintenance Shed

0 50 100 feet

N W E S

Prepared for:
U.S. EPA Region 8

Contract No.:
EP-S8-13-01

TDD:
1802-06

TO:
0003

Prepared By:
Weston Solutions, Inc.
START IV

Suite 100
1435 Garrison Street
Lakewood, CO 80215

FIGURE 2

SITE VICINITY

**LIVINGSTON MEMORIAL HOSPITAL
LIVINGSTON, PARK COUNTY, MONTANA**

DATE: 3/27/2018

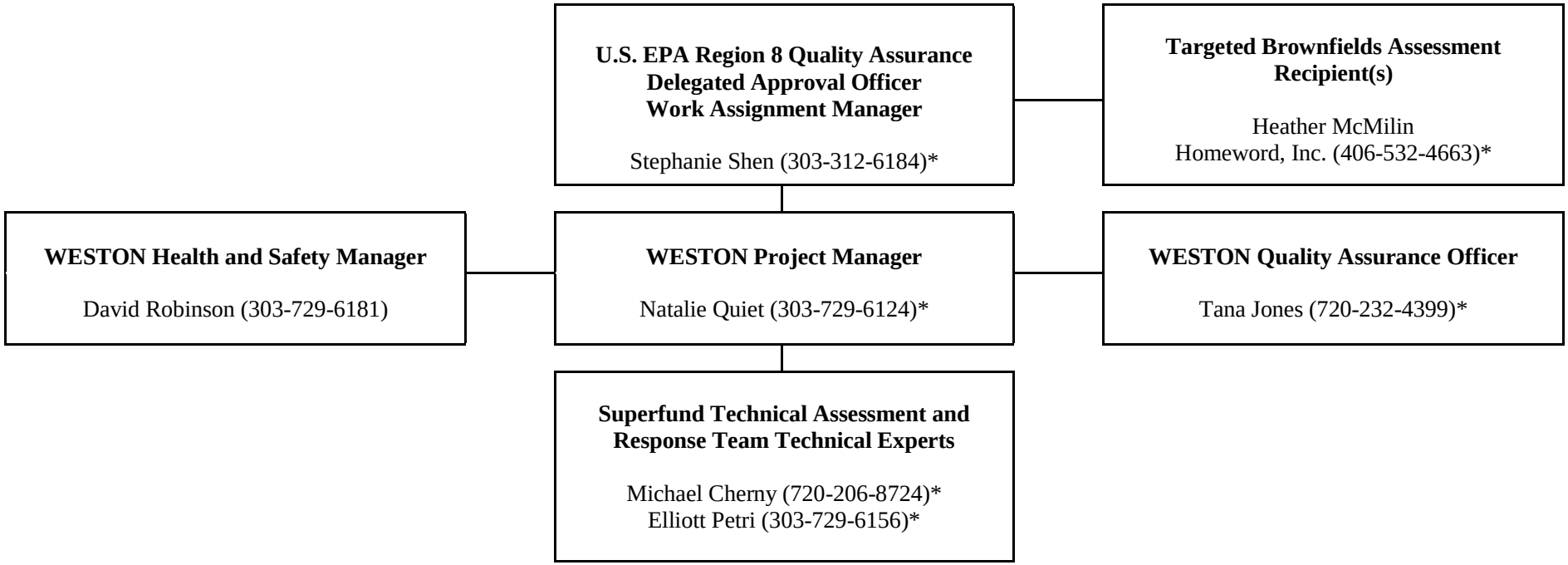
ATTACHMENTS

ATTACHMENT A
SUPPORTING UFP-QAPP WORKSHEETS

Worksheet 3 & 5 — Project Organization and QAPP Distribution

(UFP-QAPP Manual Section 2.3 and 2.4)
(EPA 2106-G-05 Section 2.2.3 and 2.2.4)

Project SAP Organization and Distribution



* = receive copy of Project SAP

Worksheet 12 — Measurement Performance Criteria Tables

(UFP-QAPP Manual Section 2.6.2)
(EPA 2106-G-05 Section 2.2.6)

The following information is project-specific and will be provided for each matrix, analytical group or analytical method, and concentration level (if applicable) and will be included in the site-specific FSP, SAP, and/or QAPP. The following are examples for Organics and Inorganics for all media, and particulates, fibers, and biologicals.

Worksheet 12.1 — Measurement Performance Criteria - Inorganics

Matrix: All
Analytical Group or Method: Inorganics
Concentration Level: All

DQI	QC Sample or Measurement Performance Activity	MPC
Field Precision	Field Duplicate	1 per 10 samples RPD determined on a sampling method-specific basis
Field Representativeness/ Accuracy/Bias	Equipment Rinsate Blank	1 per 20 samples/matrix or 1 per day <½ LOQ
Accuracy/Bias	MS/MSD	1 per 20 samples per matrix RPD <20%
Laboratory Precision	Laboratory Duplicate	1 per 20 samples per matrix RPD <20%
Accuracy/Precision	Initial Calibration	Daily prior to sample analysis (minimum 1 standard and a blank)
Accuracy/Bias	Initial Calibration Verification	Daily after initial calibration All analytes within ±10% of expected value
Accuracy/Bias	Calibration Blank (CB) Initial Calibration Blank/Continuing Calibration Blank (ICB/CCB)	After every calibration/verification No analytes detected ≥ Limit of Detection (LOD)
Precision/Accuracy	Calibration Verification (Instrument Check Standard)	At beginning of analytical sequence, after every 10 samples and at the end of the analysis sequence All analytes within ±10% of expected value and RSD of replicate integrations <5%
Precision	Interference Check Solution	At beginning of analytical run ± 20% of the expected value
Precision/Accuracy	Serial Dilution	Method-specific
Accuracy/Bias	Post Digestion Blank	Each digestion batch %R. Analyte-specific

DQI	QC Sample or Measurement Performance Activity	MPC
Laboratory Representativeness/ Accuracy/Bias	Method Blank	1 per batch per matrix or 1 per 20 samples, whichever is more frequent No analyte ≥ Reporting Limit (RL)
Laboratory Accuracy/ Sensitivity	LCS	1 per batch per matrix or 1 per 20 samples, whichever is more frequent No analyte ≥ LOQ

Worksheet 12.2 — Measurement Performance Criteria – Fibers

Matrix: All
Analytical Group or Method: Fibers
Concentration Level: All

DQI	QC Sample or Measurement Performance Activity	MPC
Field Precision	Field Duplicate	1 per 10 samples RPD determined on a sampling method-specific basis
Field Representativeness/ Accuracy/Bias	Field Blank	1 per 20 samples per matrix No fiber counts yielding greater than 7 fibers per 100 graticule fields (phase contrast microscopy [PCM])
Laboratory Precision	Laboratory Replicate Fiber Count	1 per day per matrix per analyst Laboratory obtained RSD for each sample matrix analyzed in each of the following ranges: 5 to 20 fibers in 100 graticule fields, >20 to 50 fibers in 100 graticule fields, and >50 to 100 fibers in 100 graticule fields not exceeded (PCM)
Laboratory Accuracy/Bias	Blind Recounts	On 10% of filters counted Absolute value of the difference between the square roots of the two fiber counts (in fiber/mm^2) < 2.77(average of the square roots of the two fiber counts) (intracounter relative standard deviation for the appropriate count range/2) (PCM)
Accuracy/Precision	Initial Calibration	Daily prior to sample analysis Phase rings are concentric (PCM). True magnification calculated and reference selected area electron diffraction, microdiffraction patterns, pattern visibility, and energy-dispersive X-ray (EDX) spectra obtained (transmission electron microscopy [TEM]).
Accuracy/Bias	Initial Calibration Verification	Daily after initial calibration and for each analyst/microscope combination All grooved lines in each block of the test slide resolve appropriately (PCM).

Worksheet 13 — Secondary Data Uses and Limitations

(UFP-QAPP Manual Section 2.7)
(EPA 2106-G-05 Chapter 3: QAPP Elements for Evaluating Existing Data)

Sources and types of secondary data include but are not limited to the following:

Data Type	**Data Source** (originating organization, report title and date)	**Data Uses Relative to Current Project**	**Factors Affecting the Reliability of Data and Limitations on Data Use**
Soils	United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey and Soil Data Mart	Identify soil types, composition, elevation, precipitation, setting, properties and qualities, profile, land capability and farmland classification	Project-Specific
Geology/Hydrology	United States Department of the Interior Geologic Survey (USGS) Topographic and Geologic Maps, State Agencies/EPA My WATERS Mapper	Identify area Geology, topography, surface water bodies, hydrologic units/watersheds, water quality, etc.	Project-Specific
Streams/Drainages	EPA My WATERS Mapper and USGS Topographic Maps	Topography, surface water bodies, hydrologic units/watersheds, water quality, etc.	Project-Specific
Registered Wells	State Databases	Identify well locations, drinking water wells, and groundwater use	Project-Specific
Meteorological	National Weather Service	Seasonal fluctuations in storm water runoff	Project-Specific
Property Boundaries	County Assessor and Plat Maps	Identify property boundaries to determine site requirements for assessment	Project-Specific
Environmentally Sensitive Areas	U.S. and State Fish & Wildlife Service Maps, Publications, and Databases	Identify sensitive and endangered species and environments potentially present on or in site assessment area	Project-Specific
Wetlands	USDA NRCS Web Soil Survey and Soil Data Mart (Hydric Soils List), and U.S. and State Fish & Wildlife Databases	Identify wetlands and associated sensitive and endangered species and environments potentially present on or in site assessment area	Project-Specific
Historical and Current Site Use and Investigations	Historical Records, Previous Investigations, Regulatory Agency Files, Historical Aerial Photographs, Visual Site Reconnaissance, and Interviews	Supplemental background information on historical site use and current site conditions, and previous investigations	Project-Specific

The project team will carefully evaluate the quality of secondary data (in terms of precision, bias, representativeness, comparability, and completeness) to ensure they are of the type and quality necessary to support their intended uses. When evaluating the reliability of secondary data and determining limitations on their uses, the project team will consider the source of the data, the time period during

which they were collected, data collection methods, potential sources of uncertainty, the type of supporting documentation available, and the comparability of data collection methods to the currently proposed methods. With respect to secondary analytical data that will be utilized to support critical decisions, such as comparison of contaminant levels with applicable standards, a detailed review of the data will be necessary to determine the usability of the data. In addition to the qualitative rating of the data source, the project team should complete a data quality review and document the review in a data usability summary. The protocol for completing the data usability report is provided in Worksheet 37.

In accordance with EPA guidance documents *A Summary of General Assessment Factors for Evaluating the Quality of Scientific and Technical Information* (June 2003) and subsequent addendum *Guidance for Evaluating and Documenting the Quality of Existing Scientific and Technical Information* (December 2012) (Appendix E), the following assessment factors will be utilized to assess the quality and relevance of scientific and technical information:

1. **Soundness** – the extent to which the scientific and technical procedures, measures, methods or models employed to generate the information are reasonable for, and consistent with, the intended application.
2. **Applicability and Utility** – the extent to which the information is relevant for the Agency's intended use.
3. **Clarity and Completeness** – the degree of clarity and completeness with which the data, assumptions, methods, quality assurance, sponsoring organizations and analyses employed to generate the information are documented.
4. **Uncertainty and Variability** – the extent to which the variability and uncertainty (quantitative and qualitative) in the information or in the procedures, measures, methods or models are evaluated and characterized.
5. **Evaluation and Review** – the extent of independent verification, validation and peer review of the information or of the procedures, measures, methods or models.

Use of secondary data will be evaluated as part of Phase I and Phase II ESAs. The type of information, sources of information and quantity of information will be project-specific. The following table can be utilized and/or modified as appropriate in the development of the site-specific FSP, SAP, and/or QAPP, and site report to capture the review of the secondary data assessment factors. Assessment factors will be rated as Acceptable, Marginal, Unacceptable, Not Applicable, or Indeterminate.

Citation	Reference Type	Assessment Factor				
		Soundness	Applicability and Utility	Clarity and Completeness	Uncertainty and Variability	Evaluation and Review

Worksheet 14 & 16 —Project Tasks & Schedule

(UFP-QAPP Manual Section 2.8.2)
(EPA 2106-G-05 Section 2.2.4)

Activity	Responsible Party	Planned Start Date	Planned Completion Date	Deliverable(s)	Deliverable Due Date
Project Kickoff Call	EPA, TBA Recipient, and START	2/14/2018	2/14/2018	Not Applicable (N/A)	N/A
Develop Draft Phase I ESA report	START	2/19/2018	3/19/2018	Draft Phase I ESA report	3/19/2018
EPA and TBA Recipient Review of Draft Phase I ESA	EPA and TBA Recipient	3/19/2018	3/23/2018	Comments on Draft Phase I ESA	N/A
Develop a Draft SAP and the EPA Region 8 QA Document Review Crosswalk	START	3/21/2018	3/30/2018	Draft SAP and the Draft EPA Region 8 QA Document Review Crosswalk	4/2/2018
EPA and TBA Recipient Review of Draft SAP	EPA and TBA Recipient	4/2/2018 or upon receipt	4/9/2018 or five business days after receipt	Comments on Draft SAP	N/A
Address Comments/Develop Final SAP and EPA Region 8 QA Document Review Crosswalk	START	4/9/2018 or upon receipt	4/13/2018 or five business days after receipt	SAP and the Final EPA Region 8 QA Document Review Crosswalk	4/13/2018
Develop Final Phase I ESA report	START	Upon receipt of comments	4/6/2018	Final Phase I ESA	4/6/2018
Develop HASP	START	4/9/2018	4/13/2018	HASP	N/A
Mobilization	START	4/16/2018	4/16/2018	N/A	N/A
Field Activities	START	4/17/2018	4/18/2018	Field Notes/Activity Updates	N/A
Demobilization	START	4/19/2018	4/19/2018	N/A	N/A
Analytical Tasks	START	4/20/2018	4/27/2018 or ten business days after receipt of samples	Field Notes/Laboratory Reports	N/A

Activity	Responsible Party	Planned Start Date	Planned Completion Date	Deliverable(s)	Deliverable Due Date
Data Verification and Validation	START	4/27/2018 or upon receipt	5/4/2018 or five business days after receipt	Verification and Validation Summary included in Phase II ESA	N/A
Email Summary and/or Conference Call to Discuss Preliminary Results to Support TBA Stakeholders Planning (if requested)	START, EPA and TBA Stakeholders	To be determined, if requested	To be determined, if requested	Conference Call (if requested)	N/A
Develop Draft Phase II ESA with Cost Estimates for Cleanup Report	START	4/23/2018	5/11/2018 or five business days from receipt of lab data	Draft report	5/11/2018
EPA and TBA Stakeholder Review of Draft Phase II ESA with Cost Estimates for Cleanup Report	EPA and TBA Stakeholders	5/11/2018 or upon receipt	5/18/2018 or five business days from receipt	Comments on Draft report	N/A
Address comments / Develop Final Phase II ESA with Cost Estimates for Cleanup Report	START	5/21/2018 or upon receipt	5/25/2018 or five business days from receipt	Final report	5/25/2018
Submit Property Profile Form	START	5/28/2018 or upon completion of draft report	6/1/2018 or after submittal of final report	Property Profile Form	6/1/2018 per TDD

Notes:

All dates presented in the table are planned dates and are subject to change given uncertainties such as inclement weather, laboratory reporting, etc. that can affect actual completion of the tasks described.

Site access agreements will be managed by the EPA WAM.

Laboratory analytical services will be provided by a subcontracted laboratory. Laboratory result turnaround time (TAT) will be standard 10 business days.

All analytical data will undergo verification and validation by START as described in QAPP Worksheets 34-37.

Reports to management will be written and distributed in accordance with the QAPP Worksheet 6.

Worksheet 15 — Project Action Limits and Laboratory-Specific Detection/Quantitation Limits

(UFP-QAPP Manual Sections 2.6.2.3)
(EPA 2106-G-05 Section 2.2.6)

Matrix: Building Materials and Soil
Analytical Method: All

Analyte[1]	Project Action Limit (PAL)[2]	PAL Reference[2]	Project Quantitation Limit (PQL) Goal	Laboratory Quantitation Limit[3,4]	Laboratory Detection Limit[3,4]
ACM	>1% Asbestos	AHERA	Trace	Trace	Trace
Asbestos (dust)	Presence	AHERA	777 s/cm^2	777 s/cm^2	777 s/cm^2
LBP	>1 mg/cm^2	HUD	N/A	N/A	N/A
Lead in soil[5]	153 mg/kg	MT DEQ	20 mg/kg	3.5 mg/kg	3.5 mg/kg
PCB	Presence	N/A	N/A	N/A	N/A
Mercury	Presence	N/A	N/A	N/A	N/A
Mold	Presence	N/A	N/A	N/A	N/A

Notes:

1 Subcontract laboratories use accepted analytical methods for the isolation, detection, and quantitation of specific target compounds and analytes.

2 Links to State regulatory cleanup standards are provided in QAPP Appendix C.

3 Terminology is project/laboratory-specific.

4 The Laboratory Quantitation Limits (LQLs) and Laboratory Detection Limits (LDLs) listed are actual laboratory LQLs and LDLs from past projects in which these analyses have been conducted; however, the values listed are solely for reference purposes and may change based on the sample specific limits and/or the laboratory selected for providing sample analyses.

5 Lead-in-soil samples are taken at the discretion of the lead-based paint inspector based on results of XRF screening.

Worksheet 22 — Field Equipment Calibration, Maintenance, Testing, and Inspection

(UFP-QAPP Manual Section 3.1.2.4)
(EPA 2106-G-05 Section 2.3.6)

WESTON field personnel are responsible for the calibration of WESTON field equipment and field equipment provided by subcontractors. Documented and approved procedures will be used for calibrating measuring and testing equipment. Widely accepted procedures, such as those published by U.S. EPA and ASTM, or procedures provided by manufacturers in equipment manuals will be adopted. Items may include, but are not limited to those identified in the table below.

Field Equipment	Calibration Activity	Maintenance Activity	Testing Activity	Inspection Activity	Frequency	Acceptance Criteria	Corrective Action	Title or Position of Responsible Person	Verification	SOP Reference[1]
X-MET™ 880 X-Ray Florescence (XRF)	Check factory calibration with known standards	Check battery	Calibration check	Visually inspect for external damage (e.g., perforated lens, etc.)	Refer to instrument SOP	Refer to instrument SOP	Refer to instrument SOP	Field personnel	WAM/COR	1707
Sampling Tools (Disposable Scoops)	NA	NA	NA	Visually inspect for obvious defects or broken parts	Prior to use	NA	Replace	Field personnel	WAM/COR	NA
#60 Mesh Sieve	NA	Follow decontamination procedure	NA	Visually inspect for obvious defects or broken parts	Prior to use and between samples	NA	Replace	Field personnel	WAM/COR	EPA/600/R-95/111

[1] Refer to Field SOPs (Worksheet 21) and Analytical SOPs (Worksheet 23).

Worksheet 24 — Analytical Instrument Calibration

(UFP-QAPP Manual Section 3.2.2)
(EPA 2106-G-05 Section 2.3.6)

As stated in Worksheet 22, WESTON field personnel are responsible for the calibration of WESTON and sub-contractor provided analytical field equipment. Documented and approved procedures will be used for calibrating measuring and testing equipment. Widely accepted procedures, such as those published by U.S. EPA and ASTM, or procedures provided by manufacturers in equipment manuals will be adopted.

The responsibility for the calibration of laboratory equipment rests with the selected laboratories. Each type of instrumentation and each U.S. EPA-approved method have specific requirements for the calibration procedures, depending on the analytes of interest and the sample medium. The calibration procedures and frequencies of the equipment used to perform the analyses will be in accordance with requirements established by the U.S. EPA. The laboratory QA manager will be responsible for ensuring that the laboratory instrumentation is maintained in accordance with specifications. Individual laboratory SOPs will be followed for corrective actions and preventative maintenance frequencies. Laboratory quality control, calibration procedures, corrective action procedures, and instrument preventative maintenance will be included in an addendum to this QAPP once the laboratories have been selected for each of the TBA sites. The following information is project-specific and will be identified in the site-specific FSP, SAP, and/or QAPP. Items may include, but are not limited to those identified in the table below.

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Title/Position Responsible for CA	SOP Reference[1]
X-MET™ 880 Portable XRF Analyzer	Refer to Worksheet 22	Refer to Worksheet 22	Refer to Worksheet 22	Refer to Worksheet 22	Refer to Worksheet 22	1707
ICP-AES	See 6010C	Calibration and initial calibration verification after instrument set up, then daily; continuing calibration verifications. Upper range within 10%. New upper range limits should be determined whenever a significant change in instrument response or every six months. Low-level continuing calibration verification (LLCCV) standard with 30%.	Initial and continuing calibration verification within ± 10% of upper range true values and ± 30% LLCCV true values.	Inspect system; correct problem; re-run calibration and affected samples	Lab Manager/ Analyst	6010C

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Title/Position Responsible for CA	SOP Reference[1]
TEM	See 540/R-97/028, 100.1, 100.2, NIOSH Method 7402	Calibration and initial calibration verification after instrument set up, then as needed (at least once daily use)	Qualitative electron diffraction; calibration of TEM magnification and EDX system within typical range profiles	Re-calibrate qualitative electron diffraction; calibration of TEM magnification and EDX system; re-run calibration and affected samples	Lab Manager/ Analyst	540/R-97/028, 100.1, 100.2, NIOSH Method 7402
PLM	600/R-93/116	Sufficient to ensure proper operation, but once per year by microscope service professional	Alignment of polarizer at 90° to analyzer, and coincident with cross-lines, proper orientation of Red I compensator plate, field diaphragm in the plane of the specimen, centering of central dispersion staining stop, etc.	Re-perform microscope alignment checks; service by professional (if needed)	Lab Manager/ Analyst	600/R-93/116

[1] Refer to the Analytical SOPs table (Worksheet 23). A laboratory-specific QA Manual may be referenced on a project-specific basis and will be identified in the site specific FSP, SAP, and/or QAPP.

Worksheet 25 — Analytical Instrument and Equipment Maintenance, Testing, and Inspection

(UFP-QAPP Manual Section 3.2.3)
(EPA 2106-G-05 Section 2.3.6)

The following information is project-specific and will be identified in the site-specific FSP, SAP, and/or QAPP. All laboratories conducting analyses of samples collected under the contract are required to have a preventative maintenance program covering testing, inspection, and maintenance procedures and schedule for each measurement system and required support activity. The basic requirements and components of such a program include the following:

Instrument/ Equipment	Maintenance Activity	Testing Activity	Inspection Activity	Frequency	Acceptance Criteria	Corrective Action (CA)	Title/ Position Responsible for CA	SOP Reference[1]
ICP-AES	Replace disposable, flush lines, and clean autosampler	Analytical standards	Instrument performance and sensitivity	Daily or as needed	CCV pass criteria	Recalibrate	Analyst	6010C
TEM	Qualitative electron diffraction; calibration of TEM magnification and EDX system.	Sensitivity check	Instrument performance and sensitivity	Daily or as needed	Within typical range profiles	Recalibrate	Analyst	540/R-97/028, 100.1, 100.2, NIOSH Method 7402
PLM	Alignment of polarizer orientation of Red I compensator plate, field diaphragm check, centering of central dispersion staining stop, etc.	Alignment checks	Instrument performance and sensitivity	Daily or as needed	Microscope alignment checks acceptable	Recalibrate	Analyst	600/R-93/116

[1] Refer to the Analytical SOPs table (Worksheet 23). A laboratory-specific QA Manual may be referenced on a project-specific basis and will be identified in the site specific FSP, SAP, and/or QAPP.

Worksheet 26 & 27 — Sample Handling, Custody, and Disposal

(UFP-QAPP Manual Section 3.3)
(EPA 2106-G-05 Manual Section 2.3.3)

Examples of field documentation are presented in the QAPP such as the field form (QAPP Appendix L), chain-of-custody (QAPP Appendix M), and sample label and custody seal (QAPP Appendix N). SOPs for sample handling (identified in the table below) are located in QAPP Appendix H.

Sampling Organization: START
Laboratory: TDB
Method of sample delivery (shipper/carrier): Drop-off/FedEx
Number of days from reporting until sample disposal: TBD

Activity	Organization and Title or Position of Person Responsible for the Activity	SOP Reference
Sample Labeling	START Field Personnel	QAPP Appendix H; SOP G-1 & G-3
Chain-of-Custody Form Completion	START Field Personnel	QAPP Appendix H; SOP G-8
Sample Packaging	START Field Personnel	QAPP Appendix H; SOP G-9
Shipping Coordination	START Field Personnel	QAPP Appendix H; SOP G-9
Sample Receipt, Inspection, & Log-in	Laboratory Sample Custodian	Laboratory SOP
Sample Custody and Storage	Laboratory Sample Custodian /Laboratory Analytical Personnel	Laboratory SOP
Sample Disposal	START Field Personnel/Laboratory Sample Custodian /Laboratory Analytical Personnel	QAPP Appendix H; SOP G-1 & G-3 Laboratory SOP

Supplies and consumables can be received at a WESTON office, EPA Warehouse, or other designated locations (e.g., hotel). When supplies are received at a WESTON office or EPA Warehouse, the PM or PTL will sort the supplies according to vendor, check packing slips against purchase orders, and inspect the condition of all supplies before the supplies are accepted for use on a project. If the supplies do not meet the acceptance criteria, deficiencies will be noted on the packing slip and purchase order. The item will then be returned to the vendor for replacement or repair. Procedures for receiving supplies and consumables in the field are similar to those described above. Upon receipt, items will be inspected by the START PM or PTL against the acceptance criteria. Any deficiencies or problems will be noted in the field logbook, and deficient items will be returned for immediate replacement.

Data collection activities, including sample collection and data generation, will be verified in accordance with the START IV Program QAPP, Worksheet 35.

Data will be validated by START. Data will be reviewed for usability in accordance with the START IV Program QAPP, Worksheet 37.

Worksheet 29 — Project Documents and Records

(UFP-QAPP Manual Section 3.5.1)
(EPA 2106-G-05 Section 2.2.8)

Information in this worksheet is project-specific and will be identified in the site-specific FSP, SAP, and/or QAPP. All records will be generated and verified by WESTON personnel only, stored electronically on the WESTON server and backed up daily. All hard and electronic copies of finalized documents and technical project documents (including but not limited to the QAPP, HASP, etc.) will be retained by WESTON in accordance with Section H.20 of Contract No.: EP-S8-13-01. Other project-related files, such as contract documents, employee benefits, and other information will be retained in accordance with WESTON Policies and Procedures.

Sample Collection and Field Records			
Record	**Generation**	**Verification**	**Storage Location/Archival**
Field Logbook or Data Collection Sheets	PTL/Field Scientist	Delegated QA Manager	Project File
Chain-of-Custody Forms	PTL/Field Scientist	Delegated QA Manager	Project File
Custody Seals	PTL/Field Scientist	Delegated QA Manager	Project File
Air Bills	PTL/Field Scientist	Delegated QA Manager	Project File
Daily QC Reports	PTL	Delegated QA Manager	Project File
Deviations	PTL/Field Scientist	Delegated QA Manager	Project File
Corrective Action Reports	Delegated QA Manager	PM	Project File
Correspondence	PTL	Delegated QA Manager	Project File
Field Sample Results/Measurements	PTL/Field Scientist	Delegated QA Manager	Project File
Tailgate Safety Meeting Items	PTL/Field Safety Officer	Delegated QA Manager	Project File

Project Assessments			
Record	**Generation**	**Verification**	**Storage Location/Archival**
Field Analysis Audit Checklist	Delegated QA Manager	PM	Project File
Fixed Laboratory Audit Checklist	Delegated QA Manager	PM	Project File
Data Verification Checklists	Delegated QA Manager	PM	Project File
Data Validation Report	Delegated QA Manager	PM	Project File
Data Usability Assessment Report	Delegated QA Manager	PM	Project File
Corrective Action Reports	Delegated QA Manager	PM	Project File
Correspondence	Delegated QA Manager	PM	Project File

Project Assessments			
Laboratory Records			
Record	**Generation**	**Verification**	**Storage Location/Archival**
Sample Receipt, Custody, and Checklist	Laboratory Sample Receiving	Laboratory PM/Delegated QA Manager	Laboratory and Project File
Equipment Calibration Logs	Laboratory Technician	Laboratory PM/Delegated QA Manager	Laboratory and Project File
Standard Traceability Logs	Laboratory Technician	Laboratory PM/Delegated QA Manager	Laboratory and Project File
Sample Prep Logs	Laboratory Technician	Laboratory PM/Delegated QA Manager	Laboratory and Project File
Run Logs	Laboratory Technician	Laboratory PM/Delegated QA Manager	Laboratory and Project File
Equipment Maintenance, Testing, and Inspection Logs	Laboratory Technician/ Laboratory QA Manager	Laboratory PM/Delegated QA Manager	Laboratory and Project File
Corrective Action Reports	Laboratory QA Manager	Laboratory PM/Delegated QA Manager	Laboratory and Project File
Laboratory Analytical Results	Laboratory Technician/ Laboratory QA Manager	Laboratory PM/Delegated QA Manager	Laboratory and Project File
Laboratory QC Samples, Standards, and Checks	Laboratory Technician/ Laboratory QA Manager	Laboratory PM/Delegated QA Manager	Laboratory and Project File
Instrument Results (raw data) for Primary Samples, Standards, QC Checks, and QC Samples	Laboratory Technician/ Laboratory QA Manager	Laboratory PM/Delegated QA Manager	Laboratory and Project File
Sample Disposal Records	Laboratory Technician	Laboratory PM/Delegated QA Manager	Laboratory and Project File

Laboratory Data Deliverables[1]						
Record	**VOCs**	**SVOCs**	**PCBs**	**Pesticides**	**Metals**	**Other**
Narrative						
Chain-of-Custody						
Summary Results						
QC Results						
Chromatograms						
Tentatively Identified Compounds						

[1] The Laboratory Data Deliverables table is designed to be a checklist for use in supporting data completeness. The records and analytical groups in this table are not all inclusive of those that may be used on a specific project and should be modified and utilized by the Delegated QA Manager as applicable.

Worksheet 31, 32 & 33 — Assessments and Corrective Action

(UFP-QAPP Manual Sections 4.1.1 and 4.1.2)
(EPA 2106-G-05 Section 2.4 and 2.5.5)

Information in this worksheet is project-specific and will be identified in the site-specific FSP, SAP, and/or QAPP. All reports will be prepared by WESTON and distributed to the following to include but not be limited to the WESTON PM, Program Manager and Delegated QA Manager, and the U.S. EPA COR, WAM, and DAO as applicable.

Assessment Type	Responsible Party & Organization	Number/ Frequency	Estimated Dates	Assessment Deliverable	Deliverable Due Date
Field Sampling Technical Systems Audit (TSA)[1]	Tana Jones, PMP Delegated QA Manager WESTON Natalie Quiet PM WESTON Stephanie Shen, WAM, COR EPA	Minimum one audit per sample collection activity per assessment. Second audit if a second phase starts more than 6 months after the initial phase / Once, then as needed	TBD	TSA Memorandum and Checklist	TBD
Laboratory TSA[2]	Laboratory QA Manager TBD Tana Jones, PMP Delegated QA Manager WESTON Stephanie Shen, WAM, COR EPA	CLP, CRL, and certified sub-contract laboratories are routinely audited by accrediting authorities. The laboratory QA manager and/or WESTON Delegated QA Manager will perform audits on a project-specific basis as needed	TBD	Analytical TSA Memorandum and Checklist	TBD
Project-Specific PT Samples	Tana Jones, PMP Delegated QA Manager WESTON Chemist WESTON/START Stephanie Shen, WAM, COR EPA	TBD	TBD	PT Deficiency Report	TBD

Assessment Type	Responsible Party & Organization	Number/ Frequency	Estimated Dates	Assessment Deliverable	Deliverable Due Date
Management Review	Tana Jones, PMP Delegated QA Manager WESTON Natalie Quiet PM WESTON Stephanie Shen, WAM, COR EPA	TBD	TBD	QA Management Report	TBD
Corrective Action	Tana Jones, PMP Delegated QA Manager WESTON Natalie Quiet PM WESTON Stephanie Shen, WAM, COR EPA	TBD	TBD	Corrective Action Reports	TBD
Data Validation	Chemist WESTON/START	TBD	TBD	Data Validation Report	TBD
Contract Closeout	Mark Blanchard, P.G., LEED® AP Program Manager WESTON	TBD	TBD	Contract Closeout Report	TBD

[1] Field sampling TSAs may include, but are not limited to the following: sample collection records; sample handling, preservation, packaging, shipping, and custody records; equipment operation, maintenance, and calibration records.

[2] Laboratory TSAs may include, but are not limited to the following: sample log-in, identification, storage, tracking, and custody procedures; sample and standards preparation procedures; availability of analytical instruments; analytical instrument operation, maintenance, and calibration records; laboratory security procedures; qualifications of analysts; case file organization and data handling procedures.

Worksheet 35 — Data Verification Procedures

(UFP-QAPP Manual Section 5.2.2)
(EPA 2106-G-05 Section 2.5.1)

The following information is project-specific and will be identified in the site-specific FSP, SAP, and/or QAPP. Inputs may include, but are not limited to those identified in the table below. Record retention is addressed in Worksheet 29.

Records Reviewed	Required Documents	Process Description	Responsible Person, Organization
Approved QAPP	Programmatic and site-specific FSP, SAP, and/or QAPP, Contract	Verify completeness, correctness, and contractual compliance of all project QA/QC and data set against the methods, SOPs, and contract requirements conforms.	Tana Jones, PMP, WESTON Cecilia H. Shappee, P.E., WESTON Mark Blanchard, P.G. LEED® AP Laboratory PM, TBD
Field SOPs	Programmatic and site-specific FSP, SAP, and/or QAPP, SOPs	Ensure that all field sampling SOPs were followed.	Tana Jones, PMP, WESTON
Analytical SOPs	Programmatic and site-specific FSP, SAP, and/or QAPP, SOPs	Ensure that all laboratory analytical SOPs were followed.	Laboratory PM, TBD
Laboratory QA Manual	Programmatic and site-specific FSP, SAP, and/or QAPP	Verify that applicable laboratory SOPs included in the laboratory QA manual were followed.	Tana Jones, PMP, WESTON Laboratory PM, TBD
Laboratory Certifications	Programmatic and site-specific FSP, SAP, and/or QAPP	Ensure that laboratory performing analytical sample analyses has current State, National Environmental Laboratory Accreditation Program, National Voluntary Laboratory Accreditation Program, or American Industrial Hygiene Association certifications as required by the project.	Tana Jones, PMP, WESTON Laboratory PM, TBD
Field Logbook, Field Sheets, Sample Diagrams/ Surveys	Programmatic and site-specific FSP, SAP, and/or QAPP	Verify that records are present and complete for each day of field activities. Verify that all planned samples including field QC samples were collected and that sample collection locations are documented. Verify that meteorological data were provided for each day of field activities. Verify that changes/exceptions are documented and were reported in accordance with requirements. Verify that any required field monitoring was performed and results are documented.	Tana Jones, PMP, WESTON
Equipment Calibration Records	Programmatic and site-specific FSP, SAP, and/or QAPP, SOPs, field logbook	Ensure that all field analytical instrumentation SOPs and laboratory analytical SOPs for equipment calibration were followed.	Tana Jones, PMP, WESTON Laboratory PM, TBD
Chain-of-Custody Forms	Programmatic and site-specific FSP, SAP, and/or QAPP	Verify the completeness of Chain-of-Custody records. Examine entries for consistency with the field logbook. Check that appropriate methods and sample preservation have been recorded. Verify that the	Tana Jones, PMP, WESTON Laboratory PM, TBD

Records Reviewed	Required Documents	Process Description	Responsible Person, Organization
		required volume of sample has been collected and that sufficient sample volume is available for QC samples (e.g., MS/MSD). Verify that all required signatures and dates are present. Check for transcription errors.	
Relevant reports, and correspondence	Programmatic and site-specific FSP, SAP, and/or QAPP	Verify that reports are present and complete for each day of field activities. Verify that correspondence are documented and were reported in accordance with requirements.	Tana Jones, PMP, WESTON
Laboratory Deliverable	Programmatic and site-specific FSP, SAP, and/or QAPP	Verify that the laboratory deliverable contains all records specified in the QAPP. Check sample receipt records to ensure sample condition upon receipt was noted, and any missing/broken sample containers were noted and reported according to plan. Compare the data package with Chain-of-Custodies to verify that results were provided for all collected samples. Review the narrative to ensure all QC exceptions are described. Check for evidence that any required notifications were provided to project personnel as specified in the QAPP. Verify that necessary signatures and dates are present.	Tana Jones, PMP, WESTON Chemist, WESTON
Audit Reports, Corrective Action Reports	Programmatic and site-specific FSP, SAP, and/or QAPP	Verify that all planned audits were conducted. Examine audit reports. For any deficiencies noted, verify that corrective action was implemented according to plan.	Tana Jones, PMP, WESTON Chemist, WESTON Laboratory PM, TBD

This worksheet describes the issue resolution process and the individual responsible for conveying results to data users. For issues internal to the laboratory, the laboratory PM will be the responsible party for data resolution issues and will be responsible for conveying this information to the Delegate QA Manager or delegated authority. For external laboratory data and quality issues, the Delegated QA Manager or delegated authority will provide issue resolution information and will be the responsible party for conveying this information to data users. For quality documents, reports, and field information, the Delegated QA Manager, delegated authority, or other persons identified in the table above will be responsible for issue resolutions of such items and will be the responsible party for conveying that information to data users.

Worksheet 36 — Data Validation Procedures

(UFP-QAPP Manual Section 5.2.2)
(EPA 2106-G-05 Section 2.5.1)

Data Validator: START

Analytical Group/ Method	Data Deliverable Requirements	Analytical Specifications	Measurement Performance Criteria (MPC)	Percent of Data Packages to be Validated	Percent of Raw Data Reviewed	Percent of Results to be Recalculated	Validation Procedure	Validation Code[1]	Electronic Validation Program/ Version
All	Staged Electronic Data Deliverable (SEDD) Stage 1	QAPP Worksheet 28	QAPP Worksheets 11, 12, 19 & 30	100	0	0	U.S. EPA – Stage 1	SV1aM (manual)	N/A

[1] Validation Codes are provided in QAPP Appendix R.

Validation will be performed on all laboratory analytical data unless a defined quantity or percentage of samples is identified by the U.S. EPA in the Technical Direction Document or during the project-scoping meeting on a project-specific basis. Project validation criteria as per QAPP Worksheets 12, 15, 19 & 30, 28, and 36, and cited U.S. EPA SW-846 methodology will be used. WESTON-contracted laboratory data packages will be verified and validated using a Stage 1 validation, as described in the U.S. EPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use (January 2009) (QAPP Appendix O) unless otherwise specified by the U.S. EPA WAM/COR during the development of the DQOs. Validation Qualifiers will be applied using the following hierarchy: Region 8 UFP-QAPP for Removal Actions and Emergency Responses; the site-specific SAP, and/or QAPP; EPA National Functional Guidelines for Organic Data Review (QAPP Appendix P); EPA National Functional Guidelines for Inorganic Data Review (QAPP Appendix Q); U.S. EPA Publication SW-846; and the laboratory-specific SOP. Methods for which no data validation guidelines exist will be validated following the guidance deemed most appropriate by the data validator. State specific data validation requirements will also be met, when applicable.

The data validator will receive all laboratory packages and analytical results electronically. Additionally, the validator will be required to submit final validation reports via Portable Document Format (PDF) format and must provide an annotated laboratory analytical result electronic data deliverable (EDD) with applicable data validation qualifiers (QAPP Appendix R) identified in the site-specific SAP, and/or QAPP, and/or result value modifications. The Delegated QA Manager will use U.S. EPA document Using Qualified Data to Document an Observed Release and Observed Contamination (July 1996) to aid in determining the use of qualified data to document all observed release and observed contamination by chemical analysis under U.S. EPA's Hazard Ranking System (HRS). Approved data will be released by the Delegated QA Manager for reporting.

QAPP Worksheet 35 describes the issue resolution process and the individual responsible for conveying results to data users. For issues internal to the laboratory, the laboratory PM will be the responsible party for data resolution issues and will be responsible for conveying this information to the Delegate QA Manager or delegated authority. For external laboratory data and quality issues, the Delegated QA Manager or delegated authority will provide issue resolution information and will be the responsible party for conveying this information to data users. For quality documents, reports, and field information, the Delegated QA Manager, delegated authority, or other persons identified in the table in QAPP Worksheet 35 will be responsible for issue resolutions of such items and will be the responsible party for conveying that information to data users.

Worksheet 37 — Data Usability Assessment

(UFP-QAPP Manual Section 5.2.3 and Table 12)
(EPA 2106-G-05 Section 2.5.2, 2.5.3, and 2.5.4)

Personnel (organization and position/title) responsible for participating in the data usability assessment may include, but not be limited to:

WESTON PM
WESTON Delegated QA Manager
WESTON Risk Assessor
WESTON Chemist
WESTON PTL
WESTON Statistician

Based on project-specific oversight responsibilities and analytical scopes, this data usability assessment worksheet outlines the approach that will be taken as the analytical scope expands on a project-specific basis. The following general steps will be followed to assure that the data usability assessment evaluates whether underlying assumptions used during systematic planning are supported, sources of uncertainty have been accounted for and are acceptable, data are representative of the population of interest, and the results can be used as intended, with the acceptable level of confidence:

- Step 1 – Review the project's objectives and sampling design.
- Step 2 – Review the data verification and data validation outputs.
- Step 3 – Verify the assumptions of the selected statistical method
- Step 4 – Implement the statistical method.
- Step 5 – Document data usability and draw conclusions.

The data usability assessment is considered the final step in the data evaluation process. All data will be assessed for usability, regardless of the data evaluation/validation process implementation. Data usability goes beyond validation in that it evaluates the achievement of the DQOs based on the comparison of the project DQIs and individual study-specific work plans, with the obtained results. The results of the data usability assessment, and particularly any changes to the DQOs necessitated by the data not meeting usability criteria, will be reported in accordance with Worksheet 6.

Primarily, the assessment of the usability will follow procedures described in appropriate EPA guidance documents, particularly *Guidance for Data Usability in Risk Assessment* (Publication No. 9285.7-05FS, September 1992) (Appendix S), and will be conducted according to the process outlined below.

1. **Sampling and Analysis Activities Evaluation**: The first part of the data usability evaluation will include a review of the sampling and analysis activities in comparison to project-specific DQIs and study-specific work plans. Specific limitations to the data (i.e., results that are qualified as estimated [J/UJ], or rejected [R], will be determined and documented in the database).

2. **Achievement of DQIs**: The second part of data usability pertains to the achievement of the program-specific DQIs. Each investigator will compare the performance achieved for each data quality criterion against the expected and planned performance. In general, this comparison will follow from the DQIs used to define each DQO. This comparison is the most critical component of the assessment process. Any deviation from planned performance will be documented and evaluated to determine whether

corrective action is advisable. Potential corrective actions will range from re-sampling and/or reanalysis of data, to qualification or exclusion of the data for use in the data interpretation. In the event that corrective action is not possible, the limitations, if any, of the data with regard to achieving the DQOs will be noted.

In conjunction with the DQI achievement review, the investigators will need to make decisions for the use of qualified values, which are a consequence of the formalized evaluation/validation process. Data qualifiers will be applied to individual data results. Data usability decisions will be made based on the assessment of the usability of each of these results for the intended purpose. Evaluation will describe the uncertainty (bias, imprecision, etc.) of the qualified results. Cumulative QC exceedances from the DQIs may require technical judgment to determine the overall effect on the usability of the data. Decisions about usability of qualified data for use in risk assessment will be based on the EPA document mentioned, which allows for the use of estimated values. Finally, data users may choose to determine final data usability qualifiers as a result of this overall examination and decision process.

3. **Achievement of DQOs**: The final part in the data usability process concerns achievement of the DQOs. Once the data set has been assessed to be of known quality, data limitations have been documented, and overall result applicability/usability for its intended purpose has been determined, the final data assessment can be initiated by considering the answers to the following questions:

    - Are the data adequate to determine the extent to which hazardous substances have migrated or to what extent they were expected to migrate from potential hazardous substance source areas?
    - Do the data collected adequately characterize the nature and extent of potential hazardous substance source areas at the site?
    - Are the data statistically adequate to evaluate on a per chemical and per media basis?
    - Do the data collected allow assessment of hydrogeological factors, which may influence contaminant migration/distribution?
    - Do laboratory reporting limits attain the applicable state and/or federal standards and/or screening levels?
    - Is the sample set sufficient to develop site-specific removal and disposal treatment methodologies?
    - Have sufficient data been collected to evaluate how factors including physical characteristics of the site and climate and water table fluctuations affect contaminant fate and transport?
    - Have sufficient data been collected to determine the toxicity, environmental fate, and other significant characteristics of each hazardous substance present?
    - Is the data set sufficient to evaluate the potential extent and risk of future releases of hazardous substances, which may remain as residual contamination at the source facility?

Principal investigators, in conjunction with the project team, will formulate solutions if data gaps are found as a result of problems, biases, trends, etc., in the analytical data, or if conditions exist that were not anticipated in the development of the DQOs. It is particularly important that each data usability evaluation specifically address any limitations on the use of the data that may result from a failure to achieve the stipulated DQO.

When the data do not meet the project DQOs, WESTON will investigate the root cause to the deficiency. Reasons may include laboratory operation, such as the failure of laboratory reporting limits to meet site criteria. In these situations, WESTON will discuss corrective actions with the TBA WAM. These actions may include:

- Re-sampling for all or some of the parameters.
- Preparing a technical memorandum to the site file, detailing limitations to the data.

- Validating the data at a higher tier level to better qualify the results.
- Preparing a technical memorandum determining the bias of field results.

If the project scope changes, the DQOs will be expanded. The DQOs will address the specific action limits and measurable performance criteria, in order to make appropriate decisions on the analytical data.

DQIs, such as precision, accuracy, completeness, representativeness, and comparability measurements, aid in the evaluation process and are discussed below.

Precision

The most commonly used estimates of precision are the RPD for cases in which only two measurements are available, and the percent RSD (%RSD) when three or more measurements are available. This is especially useful in normalizing environmental measurements to determine acceptability ranges for precision because it effectively corrects for the wide variability in sample analyte concentration indigenous to samples.

Precision is represented as the RPD between measurement of an analyte in duplicate samples or in duplicate spikes. RPD is defined as follows:

$$RPD = \frac{|C_1 - C_2|}{\frac{C_1 + C_2}{2}} \times 100$$

Where:

C_1 = First measurement value
C_2 = Second measurement value

For field measurements such as pH, where the absolute variation is more appropriate, precision is often reported as the absolute range (D) of duplicate measurements:

$$\%D = m1 - m2$$

Where:
$m1$ = First measurement value
$m2$ = Second measurement value
The % RSD is calculated by the standard deviation of the analytical results of the replicate determinations relative to the average of those results for a given analyte. This method of precision measurement can be expressed by the formula:

$$\%RSD = \frac{\sqrt{\sum_{I-1}^{N}\left(\frac{RF_i - RF}{N-1}\right)}}{RF} \times 100$$

Where:

RF = Response factor
N = Number of measurements

Precision control limits for evaluation of sample results are established by the analysis of control samples. The control samples can be method blanks fortified with surrogates (e.g., for organics), or LCS purchased

commercially or prepared at the laboratory. The LCS is typically identified as blank spikes (BS) for organic analyses. For multi-analyte methods, the LCS or BS may contain only a representative number of target analytes rather than the full list.

The RPD for duplicate investigative sample analysis provides a tool for evaluating how well the method performed for the respective matrix.

Accuracy/Bias

Accuracy control limits are established by the analysis of control samples, which are water and/or solid/waste matrices. For organic analyses, the LCS may be a surrogate compound in the blank or a select number of target analytes in the blank spike. The LCS is subjected to all sample preparation steps. When available, a solid LCS may be analyzed to demonstrate control of the analysis for soil. The amount of each analyte recovered in an LCS analysis is recorded and entered into a database to generate statistical control limits. These empirical data are compared with available method reference criteria and available databases to establish control criteria.

The %R for spiked investigative sample analysis (e.g., matrix spike) provides a tool for evaluating how well the method worked for the respective matrix. These values are used to assess a reported result within the context of the project data quality objectives. For results that are outside control limits provided as requirements in the QAPP, corrective action appropriate to the project will be taken and the deviation will be noted in the case narrative accompanying the sample results. Percent recovery (%R) is defined as follows:

$$\%\,\text{Recovery} = \frac{(A_T - A_0)}{A_F} \times 100$$

Where:

A_T = Total amount recovered in fortified sample
A_0 = Amount recovered in unfortified sample
A_F = Amount added to sample

Accuracy for some procedures is evaluated as the degree of agreement between a new set of results and a historical database or a table of acceptable criteria for a given parameter. This is measured as percent difference (%D) from the reference value, and is primarily used by the laboratory as a means for documenting acceptability of continuing calibration.

The %D is calculated by expressing, as a percentage, the difference between the original value and new value relative to the original value. This method for precision measurement can be expressed by the formula:

$$\%\,D = \frac{C_1 - C_2}{C_1} \times 100$$

Where:

C_1 = Concentration of analyte in the initial aliquot of the sample.
C_2 = Concentration of analyte in replicate.

The laboratory will review the QC samples and surrogate recoveries for each analysis to ensure that the %R lies within the control limits listed in the QAPP. Otherwise, data will be flagged by the laboratory.

For field measurements such as pH, accuracy is often expressed in terms of bias (B) and is calculated as follows:

$$B = M - A$$

Where:

M = Measured value of Standard Reference Material (SRM)
A = Actual value of SRM

Representativeness

Representativeness is the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. It is a qualitative parameter that depends on proper design of the sampling program.

Data representativeness for this project is accomplished by implementing approved sampling procedures and analytical methods that are appropriate for the intended data uses, and which are established within the site-specific FSP, SAP, and/or QAPP.

Field personnel will be responsible for collecting and handling samples according to the procedures in this QAPP and the site-specific FSP, SAP, and/or QAPP so that samples are representative of field conditions. Errors in sample collection, packaging, preservation, or chain-of-custody procedures may result in samples being judged non-representative and may form a basis for rejecting the data.

Completeness

Project-specific completeness goals account for all aspects of sample handling, from collection through data reporting. The level of completeness can be affected by loss or breakage of samples during transport, as well as external problems that prohibit collection of the sample. The following calculation is used for determining the percent complete:

$$\text{Completeness} = \frac{A}{B} \text{ x } 100$$

Where:

A = Actual number of measurements judged valid (the validity of a measurement result is determined by judging its suitability for its intended use)
B = Total number of measurements planned to achieve a specified level of confidence in decision making

The formula for sampling completeness is:

$$\text{Sampling Completeness} = \frac{\text{Number of locations sampled}}{\text{Number of planned sample locations}} \text{ x } 100$$

An example formula for analytical completeness is:

$$\text{Metals Analytical Completeness} = \frac{\text{Number of Usable Data Points}}{\text{Expected Number of Usable Data Points}} \text{ x } 100$$

The ability to meet or exceed completeness objectives is dependent on the nature of samples submitted for analysis.

Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another, whether it was generated by a single laboratory or during inter-laboratory studies. The use of standardized field and analytical procedures ensures comparability of analytical data. Sample collection and handling procedures will adhere to U.S. EPA-approved protocols. Laboratory procedures will follow standard analytical protocols, use standard units, use standardized report formats, follow the calculations as referenced in approved analytical methods, and use a standard statistical approach for QC measurements.

Sensitivity

Sensitivity is the ability of the analytical test method and/or instrumentation to differentiate between detector responses to varying concentrations of the target constituent. Methodology to establish sensitivity for a given analytical method or instrument includes examination of standardized blanks, instrument detection limit studies, and calibration of the QL. The findings of the usability of the data relative to sensitivity will be included in the report, including any limitations on the data set and/or individual analytical results.

The Precision, Accuracy, Representativeness, Completeness, Comparability and Sensitivity MPC are described in Worksheets 12, 15, and 28. The following steps will be performed:

- Evaluate if the project required quantitation limits listed in Worksheet 15 were achieved for non-detected site contaminants. If no detectable results were reported and data are acceptable for the verification and validation steps, then the data are usable.
- If detectable concentrations are reported and the verification and validation steps are acceptable, the data are usable.
- If verification and validation are not acceptable, the data are qualified, estimated (J, UJ) for minor QC deviations that do not affect the data usability, or rejected for major QC deviations affecting data usability. The impact of rejected data will be evaluated and re-sampling may be necessary. Use of estimated data will be discussed in the project report.
- For statistical comparisons and mathematical manipulations, non-detect values will be represented by a concentration equal to one-half the sample-specific reporting limit. Duplicate results (original and duplicate) will not be averaged for the purpose of representing the range of concentrations. However, the average of the original and duplicate will be used to represent the concentration at that sample location.

Statistical tests will be conducted to identify potential outliers. Potential outliers will be removed if a review of the field and laboratory documentation indicates that the results are true outliers.

Method sensitivity is typically evaluated in terms of the method detection limit (MDL) and is defined as follows for many measurements:

$$MDL = {}^{t}(n - 1, 1 - \alpha = 0.99)\,(s)$$

Where:

s = Standard deviation of the replicate analyses

${}^{t}(n - 1, 1 - \alpha = 0.99)$ = Student's t-value for a one-sided 99 percent confidence level and a standard deviation estimate with n-1 degrees of freedom

n = Number of measurements

α = Statistical significance level

Graphics

Graphic figures will be generated to depict sample locations, as needed. Also, if necessary, figures will be generated to represent contaminant concentrations at each sampling location. Each figure will contain a detailed legend.

Reconciliation

DQOs will be examined to determine if the objective was met. This examination will include a combined overall assessment of the results of each analysis pertinent to an objective. Each analysis will first be evaluated separately in terms of the major impacts observed from the data verification and validation, DQIs, and MPC assessments. Based on the results of these assessments, the quality of the data will be determined. Based on the quality determined, the usability of the data for each analysis will be determined. Based on the combined usability of the data from all analyses for an objective, it will be determined if the DQO was met and whether project action limits were exceeded. As part of the reconciliation of each objective, conclusions will be drawn, and any limitations on the usability of any of the data will be described.

ATTACHMENT B

U.S. EPA REGION 8 QA DOCUMENT REVIEW CROSSWALK

EPA REGION 8 QA DOCUMENT REVIEW CROSSWALK

QAPP/FSP/SAP for: *(check appropriate box)*		**Entity** *(grantee, contract, EPA AO, EPA Program, Other)*	**Regulatory Authority** and/or **Funding Mechanism**	___ **2 CFR 1500 for Grantee/Cooperative Agreements** _**X**_ **48 CFR 46 for Contracts** ___ **Interagency Agreement (FFA, USGS)** ___ **EPA/Court Order** ___ **EPA Program Funding** ___ **EPA Program Regulation** ___ **EPA CIO 2105**
	GRANTEE	Weston Solutions, Inc.		
X	**CONTRACTOR**			
	EPA			
	Other			
Document Title ***[Note: Title will be repeated in Header]***		SAP for Livingston Memorial Hospital		
QAPP/FSP/SAP Preparer		Michael Cherny		
Period of Performance *(of QAPP/FSP/SAP)*		1 year from date of EPA approval of Task Level QAPP (Last QAPP Revision Feb 2015)	**Date Submitted for Review**	3/28/2018
EPA Project Officer **EPA Project Manager**		Joyce Ackerman Stephanie Shen	**PO Phone #** **PM Phone #**	303-312-6822 303-312-6184
QA Program Reviewer or Approving Official		Stephanie Shen	**Date of Review**	3/30/18

***Documents Submitted for QAPP Review* (QA Reviewer must complete):**

1. QA Document(s) submitted for review:

QA Document	Document Date	Document Stand-alone	Document with QAPP
QAPP	**July 2013**	Yes / **No**	
FSP		Yes / No	Yes / No
SAP	**3/30/18**	Yes / **No**	**Yes** / No
SOP(s)			Yes / No

2. WP/SOW/TO/PP/RP Date _____
WP/SOW/TO/RP Performance Period _____

3. QA document consistent with the:
WP/SOW/PP for grants? Yes / No
SOW/TO for contracts**?** **Yes** / No

4. QARF signed by R8 QAM Yes / No / NA
Funding Mechanism IA / **contract** / grant / NA
Amount _____

Notes for Document Submittals:

1. A QAPP written by a Grantee, EPA, or Federal Partner must include for review:
Work Plan(WP) / Statement of Work (SOW) / Program Plan (PP) / Research Proposal (RP) and funding mechanism

2. A QAPP written by Contractor must include for review:
a) Copy of Task Order Work Assignment/SOW
b) Reference to a hard or electronic copy of the contractor's approved QMP
c) Copy of Contract SOW if no QMP has been approved
d) Copy of EPA/Court Order, if applicable
e) The QA Review must determine (with the EPA CO or PO) if a QARF was completed for the environmental data activity described in the QAPP.

3. a. Field Sampling Plan (FSP) and/or Sampling & Analyses Plan (SAP) must include the Project QAPP ***or*** must be a stand-alone QA document that contain all QAPP required elements (Project Management, Data Generation/Acquisition, Assessment and Oversight, and Data Validation and Usability).

b. SOPs must be submitted with a QA document that contains all QAPP required elements.

Summary of Comments *(highlight significant concerns/issues)***:**

1. Comment #1
2. Comment #2
3. Comment #3
4. **The** Weston Solutions, Inc. **must address the comments in the Summary of Comments, as well as those identified in the Comment section(s) that includes a "Response (date)" and Resolved (date)".**

Element	Acceptable *Yes/No/ NA*	Page/ Section	Comments
A. Project Management			
A1. Title and Approval Sheet			
a. Contains project title	Yes	SAP Title Page and Introduction SAP Section A1.	
b. Date and revision number line (for when needed)	Yes	SAP Section A1	EPA Comment 3/30/2018 – document saved electronically as Rev 1 but the approval sheet shows 0.
c. Indicates organization=s name	Yes	SAP Title Page	
d. Date and signature line for organization=s project manager	Yes	SAP Section A1 QAPP Worksheets 1,2 4,7 & 8	
e. Date and signature line for organization=s QA manager	Yes	QAPP Worksheets 1& 2	
f. Other date and signatures lines, as needed	Yes	SAP Section A1 QAPP Worksheets 4,7 & 8	
A2. Table of Contents			
a. Lists QA Project Plan information sections	Yes	SAP Table of Contents, SAP List of Appendices	
b. Document control information indicated	Yes	SAP Section A1 QAPP Worksheet 1 & 2	
A3. Distribution List			
Includes all individuals who are to receive a copy of the QA Project Plan and identifies their organization	Yes	SAP Section A3 QAPP Worksheet 3 & 5	
A4. Project/Task Organization			
a. Identifies key individuals involved in all major aspects of the project, including contractors	Yes	QAPP Worksheet 3 & 5	
b. Discusses their responsibilities	Yes	QAPP Worksheet 4, 7 & 8	
c. Project QA Manager position indicates independence from unit generating data	Yes	QAPP Worksheet 3 & 5	
d. Identifies individual responsible for maintaining the official, approved QA Project Plan	Yes	SAP Section A1 QAPP Worksheet 4, 7 & 8	
e. Organizational chart shows lines of authority and reporting responsibilities	Yes	QAPP Worksheet 3 & 5	
A5. Problem Definition/Background			
a. States decision(s) to be made, actions to be taken, or outcomes expected from the information to be obtained	Yes	SAP Section A5 QAPP Worksheet 9	
b. Clearly explains the reason (site background or historical context) for initiating this project	Yes	SAP Section A5	EPA Comment 3/30/2018 – worksheet 10 does not exist in this document.
c. Identifies regulatory information, applicable criteria, action limits, etc. necessary to the project	Yes	SAP Section A5 and Worksheet 15	
A6. Project/Task Description			

a. Summarizes work to be performed, for example, measurements to be made, data files to be obtained, etc., that support the project=s goals	Yes	SAP Section A6 SAP Worksheet 14 & 16	
b. Provides work schedule indicating critical project points, e.g., start and completion dates for activities such as sampling, analysis, data or file reviews, and assessments	Yes	SAP Worksheet 14 & 16	
c. Details geographical locations to be studied, including maps where possible	Yes	SAP Section A6 & A7	
d. Discusses resource and time constraints, if applicable	Yes	SAP Section A6	
A7. Quality Objectives and Criteria			
a. Identifies - performance/measurement criteria for all information to be collected and acceptance criteria for information obtained from previous studies, - including project action limits and laboratory detection limits and - range of anticipated concentrations of each parameter of interest	Yes	SAP Worksheet 15 QAPP Worksheet 13 QAPP Worksheets 12.1 - 12.4	
b. Discusses precision	Yes	QAPP Worksheet 37	
c. Addresses bias	Yes	QAPP Worksheet 37	
d. Discusses representativeness	Yes	QAPP Worksheet 37	
e. Identifies the need for completeness	Yes	QAPP Worksheet 37	
f. Describes the need for comparability	Yes	QAPP Worksheet 37	
g. Discusses desired method sensitivity	Yes	QAPP Worksheet 37	
A8. Special Training/Certifications			
a. Identifies any project personnel specialized training or certifications	Yes	SAP Section A4 QAPP Worksheet 4, 7 & 8	
b. Discusses how this training will be provided	Yes	QAPP Worksheet 4, 7 & 8	
c. Indicates personnel responsible for assuring training/certifications are satisfied	Yes	QAPP Worksheet 4, 7 & 8	
d. identifies where this information is documented	Yes	QAPP Worksheet 4, 7 & 8	
A9. Documentation and Records			
a. Identifies report format and summarizes all data report package information	Yes	SAP Worksheet 14 & 16 QAPP Worksheet 29	
b. Lists all other project documents, records, and electronic files that will be produced	Yes	SAP Worksheet 14 & 16	
c. Identifies where project information should be kept and for how long	Yes	QAPP Worksheet 29	
d. Discusses back up plans for records stored electronically	Yes	SAP A9. QAPP Worksheet 29	
e. States how individuals identified in A3 will receive the most current copy of the approved QA Project Plan, identifying the individual responsible for this	Yes	SAP Introduction QAPP Worksheet 4 & 5	
B. Data Generation/Acquisition			
B1. Sampling Process Design (Experimental Design)			

a. Describes and justifies design strategy, indicating size of the area, volume, or time period to be represented by a sample	Yes	SAP Section B1. SAP Table 1	
b. Details the type and total number of sample types/matrix or test runs/trials expected and needed	Yes	SAP Section B1. SAP Table 1	
c. Indicates where samples should be taken, how sites will be identified/located	Yes	SAP Section B1. SAP Table 1	
d. Discusses what to do if sampling sites become inaccessible	Yes	SAP Section B1.	
e. Identifies project activity schedules such as each sampling event, times samples should be sent to the laboratory, etc.	Yes	SAP Worksheet 14 & 16 SAP Table 1	
f. Specifies what information is critical and what is for informational purposes only	Yes	SAP Section B1.	
g. Identifies sources of variability and how this variability should be reconciled with project information	Yes	QAPP Worksheet 17	Worksheet 17 is not included in the SAP – QAPP Worksheet 17?
B2. Sampling Methods			
a. Identifies all sampling SOPs by number, date, and regulatory citation, indicating sampling options or modifications to be taken	Yes	SAP Section B2. QAPP Worksheet 21	
b. Indicates how each sample/matrix type should be collected	Yes	SAP Section B2. and SAP Table 1 QAPP Worksheet 19 & 30	
c. If in situ monitoring, indicates how instruments should be deployed and operated to avoid contamination and ensure maintenance of proper data	Yes	QAPP Worksheet 22	
d. If continuous monitoring, indicates averaging time and how instruments should store and maintain raw data, or data averages	Yes	QAPP Worksheet 22	
e. Indicates how samples are to be homogenized, composited, split, or filtered, if needed	Yes	SAP Section B2.	
f. Indicates what sample containers and sample volumes should be used	Yes	SAP Section B2. and SAP Table 1 QAPP Worksheet 19 & 30	
g. Identifies whether samples should be preserved and indicates methods that should be followed	Yes	SAP Section B2. and SAP Table 1 QAPP Worksheet 19 & 30	
h. Indicates whether sampling equipment and samplers should be cleaned and/or decontaminated, identifying how this should be done and by-products disposed of	Yes	QAPP Worksheet 21	
i. Identifies any equipment and support facilities needed	Yes	SAP Worksheet 22	
j. Addresses actions to be taken when problems occur, identifying individual(s) responsible for corrective action and how this should be documented	Yes	SAP Worksheet 31, 32 & 33	
B3. Sample Handling and Custody			
a. States maximum holding times allowed from sample collection to extraction and/or analysis for each sample type and, for in-situ or continuous monitoring, the maximum time before retrieval of information	Yes	SAP Table 1 QAPP Worksheet 19 & 30	

b. Identifies how samples or information should be physically handled, transported, and then received and held in the laboratory or office (including temperature upon receipt)	Yes	SAP Table 1 SAP Worksheet 26 & 27	
c. Indicates how sample or information handling and custody information should be documented, such as in field notebooks and forms, identifying individual responsible	Yes	SAP Section B3. SAP Worksheets 26 & 27	
d. Discusses system for identifying samples, for example, numbering system, sample tags and labels, and attaches forms to the plan	Yes	SAP Worksheet 26 & 27	
e. Identifies chain-of-custody procedures and includes form to track custody	Yes	SAP Worksheet 26 & 27	
B4. Analytical Methods			
a. Identifies all analytical SOPs (field, laboratory and/or office) that should be followed by number, date, and regulatory citation, indicating options or modifications to be taken, such as sub-sampling and extraction procedures	Yes	SAP Section B2. QAPP Worksheet 23	
b. Identifies equipment or instrumentation needed	Yes	QAPP Worksheets 23, 24	
c. Specifies any specific method performance criteria	Yes	QAPP Worksheets 23, 24	
d. Identifies procedures to follow when failures occur, identifying individual responsible for corrective action and appropriate documentation	Yes	QAPP Worksheet 22, 24	
e. Identifies sample disposal procedures	Yes	SAP Worksheet 26 & 27 QAPP Appendix I	
f. Specifies laboratory turnaround times needed	Yes	QAPP Worksheet 19 & 30	
g. Provides method validation information and SOPs for nonstandard methods	Yes	QAPP Worksheets 23, 25 & 28	
B5. Quality Control			
a. For each type of sampling, analysis, or measurement technique, identifies QC activities which should be used, for example, blanks, spikes, duplicates, etc., and at what frequency	Yes	SAP Section B5.	
b. Details what should be done when control limits are exceeded, and how effectiveness of control actions will be determined and documented	Yes	SAP Worksheets 25, 26 & 27 QAPP Worksheet 28	
c. Identifies procedures and formulas for calculating applicable QC statistics, for example, for precision, bias, outliers and missing data	Yes	SAP Worksheet 37	
B6. Instrument/Equipment Testing, Inspection, and Maintenance			
a. Identifies field and laboratory equipment needing periodic maintenance, and the schedule for this	Yes	SAP Worksheets 22, 24, and 25	
b. Identifies testing criteria	Yes	SAP Worksheets 22, 24, and 25	
c. Notes availability and location of spare parts	Yes	SAP Worksheets 22, 24, and 25	
d. Indicates procedures in place for inspecting equipment before usage	Yes	SAP Worksheets 22, 24, and 25	
e. Identifies individual(s) responsible for testing, inspection and maintenance	Yes	SAP Worksheets 22, 24, and 25	

f. Indicates how deficiencies found should be resolved, re-inspections performed, and effectiveness of corrective action determined and documented	Yes	SAP Worksheets 22, 24	
B7. Instrument/Equipment Calibration and Frequency			
a. Identifies equipment, tools, and instruments that should be calibrated and the frequency for this calibration	Yes	SAP Worksheets 22 and 24	
b. Describes how calibrations should be performed and documented, indicating test criteria and standards or certified equipment	Yes	SAP Worksheet 22, 26 & 27	
c. Identifies how deficiencies should be resolved and documented	Yes	SAP Worksheet 22, 26 & 27	
a. Identifies critical supplies and consumables for field and laboratory, noting supply source, acceptance criteria, and procedures for tracking, storing and retrieving these materials	Yes	SAP Attachment A SAP Attachment D SAP Worksheets 22, 26 & 27	
b. Identifies the individual(s) responsible for this	Yes	SAP Attachment A SAP Attachment D SAP Worksheets 22, 26 & 27	
B9. Use of Existing Data (Non-direct Measurements)			
a. Identifies data sources, for example, computer databases or literature files, or models that should be accessed and used	Yes	SAP Worksheet 13	
b. Describes the intended use of this information and the rationale for their selection, i.e., its relevance to project	Yes	SAP Worksheet 13	
c. Indicates the acceptance criteria for these data sources and/or models	Yes	SAP Worksheet 13	
d. Identifies key resources/support facilities needed	Yes	SAP Worksheet 13	
e. Describes how limits to validity and operating conditions should be determined, for example, internal checks of the program and Beta testing	Yes	SAP Worksheet 13	
B10. Data Management			
a. Describes data management scheme from field to final use and storage	Yes	SAP Worksheets 26 & 27, 29, and 35	
b. Discusses standard record-keeping and tracking practices, and the document control system or cites other written documentation such as SOPs	Yes	SAP Section B10. SAP Worksheets 26 & 27, 29	
c. Identifies data handling equipment/procedures that should be used to process, compile, analyze, and transmit data reliably and accurately	Yes	SAP Section B10. SAP Worksheets 22 and 29 QAPP Worksheet 23	
d. Identifies individual(s) responsible for this	Yes	SAP Worksheet 29	
e. Describes the process for data archival and retrieval	Yes	SAP Worksheet 29	
f. Describes procedures to demonstrate acceptability of hardware and software configurations	Yes	SAP Worksheet 22 QAPP Worksheet 23	
g. Attaches checklists and forms that should be used	Yes	SAP Section B10.	
C. Assessment and Oversight			
C1. Assessments and Response Actions			

a. Lists the number, frequency, and type of assessment activities that should be conducted, with the approximate dates	Yes	SAP Worksheet 31, 32 & 33	
b. Identifies individual(s) responsible for conducting assessments, indicating their authority to issue stop work orders, and any other possible participants in the assessment process	Yes	SAP Worksheet 31, 32 & 33	
c. Describes how and to whom assessment information should be reported	Yes	SAP Worksheet 31, 32 & 33	
d. Identifies how corrective actions should be addressed and by whom, and how they should be verified and documented	Yes	SAP Worksheet 31, 32 & 33	
C2. Reports to Management			
a. Identifies what project QA status reports are needed and how frequently	Yes	SAP Worksheet 31, 32 & 33	
b. Identifies who should write these reports and who should receive this information	Yes	SAP Worksheet 31, 32 & 33	
D. Data Validation and Usability			
D1. Data Review, Verification, and Validation			
Describes criteria that should be used for accepting, rejecting, or qualifying project data	Yes	SAP Worksheet 36	
D2. Verification and Validation Methods			
a. Describes process for data verification and validation, providing SOPs and indicating what data validation software should be used, if any	Yes	QAPP Worksheet 34 SAP Worksheets 35 and 36	
b. Identifies who is responsible for verifying and validating different components of the project data/information, for example, chain-of-custody forms, receipt logs, calibration information, etc.	Yes	SAP Worksheet 35	
c. Identifies issue resolution process, and method and individual responsible for conveying these results to data users	Yes	SAP Worksheets 35 and 36	
d. Attaches checklists, forms, and calculations	Yes	QAPP Worksheet 34 SAP Worksheet 37 QAPP Appendix O, P, Q, R	
D3. Reconciliation with User Requirements			
a. Describes procedures to evaluate the uncertainty of the validated data	Yes	SAP Worksheets 12 and 37 QAPP Appendix J	
b. Describes how limitations on data use should be reported to the data users	Yes	SAP Worksheet 37	

ATTACHMENT C
BACKGROUND INFORMATION

ASBESTOS SURVEY

Former Livingston Hospital
504 South 13th Street
Livingston, Montana

NESHAP Asbestos Renovation Survey

Former Livingston Hospital
504 South 13th Street
Livingston, Montana

Prepared for:

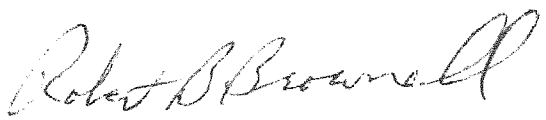
A&E, LLC
PO Box 2031
Livingston, Montana 59047

Prepared by:

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, Montana 59101

Project No. 999-3019

March 7, 2016



Robert B Brownell **MTA-3542** **Expires 03/10/2016**

TABLE OF CONTENTS

EXECUTIVE SUMMARY

At your request, Northern Industrial Hygiene (Northern) conducted an asbestos survey of the former Livingston Hospital located at 504 South 13th Street in Livingston, Montana. This report provides the summarized results of the survey conducted by Mr. Robert Brownell (MTA-3542), Mr. Logan Silveira (MTA-4712) and Mr. Kevin Oliver (MTA-1308) from December 22 through December 31, 2015. The survey was conducted to identify potential hazardous materials (asbestos) that may be disturbed during renovation of the building.

Overview of Building

The former Livingston Hospital building is a single story masonry structure with a flat roof and combination basement /crawlspace. The building was constructed in 1950 with additions in 1987 and 1989 and comprises a floor space area of approximately 43,100 square feet (SF). The exterior building finish consists of a brick masonry veneer with plywood soffits. The interior finishes at the time of the survey consisted of: ceiling tile, lay-in panel, gypsum board and plaster ceilings; gypsum board, plaster, concrete and concrete masonry unit (CMU) walls, and; carpet, vinyl sheet, vinyl tile and concrete floors.

Heat is provided by tube type hot water boilers located in the basement boiler room.

Mechanical and domestic water system piping is insulated with fiberglass, Air-cell, Duplex and magnesium silicate on straight runs with mudded and fiberglass insulated joints/fittings.

Mechanical piping is routed above the basement ceiling and through crawlspaces to heat exchangers and above the first floor ceilings to radiant panel heaters in the hallways and one forced air heat exchanger in the surgical area. Domestic water piping is routed above the basement ceiling and through crawlspaces.

Conditioned air is routed to the building interior through un-insulated metal or fiberglass insulated flexible ducts connected to air diffusers located in the drop ceiling.

The Magnetic Resonance Imaging unit and the roof of the building were not included in this inspection.

Survey Findings

A total of one hundred and one suspect building materials were identified in this building. Upon further visual examination, two materials, (Transite wall board in the refrigeration rooms and Air-cell pipe insulation throughout the building), were assumed to be asbestos-containing material (ACM). One material (wood-based 12"x12" mechanically fastened ceiling tiles) was determined to be non-suspect. The remaining ninety-eight (98) materials were sampled in accordance with current regulatory requirements. Laboratory analysis found that twenty-seven (27) of the sampled materials contain asbestos. A list of these materials and a summary of the laboratory analysis results are included in Table 1.

1.0 INTRODUCTION

Northern conducted an asbestos survey of the former Livingston Hospital building located at 504 South 13th Street in Livingston, Montana. The purpose of the asbestos survey was to identify friable and non-friable suspect asbestos-containing building materials (ACBM's), if any, in this space.

The scope of the asbestos survey included the following activities:

- Surveying, identifying, assessing the material's condition and sampling suspect friable and non-friable ACBM's; and
- Reviewing laboratory results of sampled or assumed suspect materials and preparing ACBM material location drawings.

Following completion of the survey, prepare this report documenting the sampling procedures and results of the asbestos survey and provide recommendations for management of the identified ACBM's).

Asbestos Overview

Asbestos is a trade name for a group of fibrous naturally occurring minerals that were used widely in building materials because of its ability to bind, resist chemicals, insulate, and fireproof. Exposure to elevated levels of asbestos fibers has been documented to cause a variety of diseases including asbestosis and cancer. Consequently, the application, removal, and disposal of asbestos-containing materials are regulated by several agencies.

Asbestos in most building materials poses little threat to human health as long as the asbestos fibers are securely bound within the building material. However, as the materials deteriorate because of time or exposure, or are disturbed because of human or other activities, the potential increases for the fibers to become airborne. When this occurs, the risk to human health increases significantly when the fibers are inhaled.

The National Emissions Standards for Hazardous Air Pollutants (NESHAP) defines ACM as a material containing greater than (>)1% asbestos and assigns ACM to three categories: regulated asbestos-containing material (RACM), Category I, and Category II. RACM is defined as an ACM that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure (friable). RACM also includes: Category I and Category II materials that will be (or have been) subjected to sanding, grinding, cutting or abrading, or; Category II materials that have a high probability of becoming (or have become) crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition/renovation operations. Category I ACMs are non-friable packings, gaskets, resilient floor coverings, and asphalt roofing products. Category II ACMs are non-friable materials, excluding Category I non-friable ACMs, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. The Administrative Rules of Montana (ARM) adopts the NESHAP by reference.

The NESHAP requires that the building owner or operator provide notification at least 10 working days prior to commencing renovation activities that will disturb more than 160 square feet (SF) or 260 linear feet (LF) of RACM, or prior to any demolition activities. The NESHAP also requires that RACM be removed prior to renovation/demolition activities that will disturb the material.

The MDEQ adopted the NESHAP by reference and requires the building owner/operator to apply for an Asbestos Abatement Permit at least 5 working days prior to commencing asbestos abatement project involving > 10 SF but less than (<) 160 SF in surface area or >3 LF but < 260 LF of RACM. The permit application must be submitted at least ten working days prior to commencing an asbestos abatement project involving >160 SF or 260 LF of RACM or prior to any demolition. Notification of the MDEQ satisfies the NESHAP notification requirement.

The MDEQ requires that personnel conducting permitted asbestos abatement projects be accredited by the State of Montana. The MDEQ also requires an asbestos abatement design be prepared by a State of Montana accredited asbestos project designer for projects requiring an Asbestos Abatement Project Permit.

The Occupational Safety and Health Administration (OSHA) requires that employees that will be exposed to any amount of asbestos be trained in accordance with the provisions of 29 CFR 1926.1101. The OSHA standard also requires that employee exposure to asbestos fibers not exceed either the permissible exposure limit (PEL) of 0.1 fibers per cubic centimeter (f/cc) of air for an eight (8) hour time-weighted average (TWA) or the excursion limit (EL) of 1.0 f/cc for any thirty (30) minute work period.

2.0 SURVEY PROCEDURES

The asbestos survey was conducted using the applicable portions of the currently recognized standard protocol developed for schools under AHERA, as promulgated in Title 40, Code of Federal Regulations (40 CFR), Part 763 as amended in the Federal Register and the ARM 17.74.354. Since the primary purpose of this survey was to identify potential asbestos hazards in the portion of the building surveyed, Northern representatives visually assessed existing conditions considering each construction, addition, or renovation date as a separate, unique building.

Asbestos Survey and Sampling

The survey was conducted by our accredited inspectors, and consisted of a detailed visual survey of surfacing materials, thermal system insulation, and miscellaneous materials throughout the building. Suspect ACBM was then grouped into homogeneous materials and sampling plans were developed. Components of the survey included:

- Identification of homogeneous suspect materials on a room-by-room basis. Areas from which samples were to be obtained were also identified during this task.

- Collection and analysis of bulk samples to confirm whether or not the suspect materials contain asbestos.

- An assessment of known or assumed ACBMs, generally classifying the materials using categories defined in the NESHAP regulations.

- Homogeneous suspect ACBMs were, for the purposes of this study and as outlined in the AHERA sampling protocol, placed into the following material type categories: thermal system insulation (TSI), surfacing materials and miscellaneous. AHERA sampling protocol specifies sampling procedures for each material type.

Sample locations for this survey were selected in a non-random fashion, with emphasis placed on collecting samples of each type of accessible, suspect material and minimizing damage to the material being sampled. Samples were collected by carefully removing small portions of the suspect material in a non-abrasive manner using techniques such as wet slicing, wet boring or similar methods designed to limit contamination of the area during sampling. Samples were collected from existing damaged areas or loose pieces of material where possible. The samples were placed in pre-labeled plastic containers. Immediately after sample collection. Containers with samples were then placed in a large resealable plastic bag for transportation to the laboratory. The sampled area was sealed using patching compounds, duct tape, or spray encapsulants as appropriate to the material being sampled.

Laboratory Analysis of Bulk Asbestos Samples

Bulk samples collected during the inspection were assigned bulk sample numbers and entered on sample summary/chain-of-custody forms. The samples were transported to the laboratory by overnight courier under standard chain-of-custody procedures. The analysis was performed in accordance with EPA Method 600/R-93/116, which employs polarized light microscopic techniques with dispersion staining for identification of mineral forms of asbestos. The quantification of asbestos in the sample is intended to be an estimate only and the limit of detection for this method is approximately 1% by volume. Sample laboratory analysis results are presented in Table 1.

Quality Assurance and Quality Control

Quality Assurance and quality control (QA/QC) measures adopted by Northern involved field and office components. Key parameters are summarized below:

Field QA/QC

- Review inspection forms for completeness;
- Check Homogeneous Materials Listing for sufficient number of collected samples; and
- Verify locations of major mechanical components.

Office QA/QC

- Review lab results for completeness;
- Ensure appropriate cross-referencing of results from forms for each given ACBM;
- Ensure drawings are updated as necessary following field QC;
- Verify approximate quantities of ACBM based on drawing review; and
- Review recorded field comments for meaning, incorporate as necessary into report.

3.0 FINDINGS

Survey results are presented in the following paragraphs. Additional information is presented in the Report Tables, drawings, and Appendices located at the end of this report.

Overview of Building

The former Livingston Hospital building is a single story masonry structure with a flat roof and combination basement /crawlspace. The building was constructed in 1950 with additions in 1987 and 1989 and comprises a floor space area of approximately 43,100 SF. The exterior building finish consists of a brick masonry veneer with plywood soffits. The interior finishes at the time of the survey consisted of: ceiling tile, lay-in panel, gypsum board and plaster ceilings; gypsum board, plaster, concrete and concrete masonry unit (CMU) walls, and; carpet, vinyl sheet, vinyl tile and concrete floors. Heat is provided by tube type hot water boilers located in the basement boiler room.

Mechanical and domestic water system piping is insulated with fiberglass, Air-cell, Duplex and magnesium silicate on straight runs with mudded and fiberglass insulated joints/fittings.

Mechanical piping is routed above the basement ceiling and through crawlspaces to heat exchangers and above the first floor ceilings to radiant panel heaters in the hallways and one forced air heat exchanger in the surgical area. Domestic water piping is routed above the basement ceiling and through crawlspaces.

Conditioned air is routed to the building interior through un-insulated metal or fiberglass insulated flexible ducts connected to air diffusers located in the drop ceiling.

The Magnetic Resonance Imaging unit and the roof of the building were not included in this inspection.

Inspection Findings

A total of one hundred and one 101 suspect materials were identified in this building. Upon further visual examination, two (2) materials, (Transite wall board in the refrigeration rooms and Air-cell pipe insulation throughout the building), were assumed to be asbestos-containing material (ACM). One material (wood based 12"x12" mechanically fastened ceiling tiles) was determined to be non-suspect. The remaining ninety-eight (98) materials were sampled in accordance with current regulatory requirements. Laboratory analysis found that twenty-seven (27) of the sampled materials contain asbestos. A list of these materials and a summary of the laboratory analysis results are included in Table 1.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Asbestos was confirmed to be present in 27 of the sampled suspect building materials and assumed present in two additional suspect building materials.

Recommendations

Category I Materials (F2.6, F2.8, F2.11, F2.12, F2.16, F3.1, F3.2, F3.3, F3.3*, F3.4, F3.4*, F3.5, F9.1)

These materials are non-friable and generally in good condition. If these materials will not be disturbed during renovation activities, they may be left in place. If renovation activities will disturb the materials, Northern recommends the materials be removed and properly disposed of by a Montana-accredited asbestos abatement contractor prior to renovation activities that would disturb the materials.

Montana requires an asbestos abatement permit if removal activities will subject these materials to grinding, cutting, sanding, abrading or other removal procedures that would render the materials friable. Montana also requires a project design by a Montana-accredited project designer, final visual clearance inspection(s), and air clearance monitoring for all permitted asbestos abatement projects. Montana does not require an asbestos abatement permit or project design if the materials are removed using methods that do not render the materials friable.

Category II Materials (M4.1, M8.1, M8.2, M8.3, M10.1)

These materials are non-friable and generally in good condition. If these materials will not be disturbed during renovation activities, they may be left in place. If renovation activities will disturb the materials, Northern recommends the materials be removed and properly disposed of by a Montana-accredited asbestos abatement contractor prior to renovation activities that would disturb the materials.

Montana requires an asbestos abatement permit if removal activities will subject these materials to grinding, cutting, sanding, abrading or other removal procedures that would render the materials friable. Montana also requires a project design by a Montana-accredited project designer, final visual clearance inspection(s), and air clearance monitoring for all permitted asbestos abatement projects. Montana does not require an asbestos abatement permit or project design if the materials are removed using methods that do not render the materials friable.

RACM (F1.1, T2.1, T3.3, T3.4, T3.5, T12.1)

These materials are friable and generally in good condition. If these materials will not be disturbed during renovation activities, they may be left in place.

If renovation activities will disturb the materials, they must be removed and properly disposed of by a Montana-accredited asbestos abatement contractor prior to renovation activities that would disturb the materials.

RACM DEBRIS (IN CRAWLSPACES) (D-1, D-3, D-4, D-5, D-6)

The asbestos-containing debris is friable and widely scattered throughout the crawlspaces. Crawlspace access should be restricted to properly trained personnel. Northern recommends the removal and disposal of this debris when financially feasible or before conducting any renovation or demolition work that will impact this debris.

Montana requires an asbestos abatement permit for the removal and/or disposal of >3 LF, 10 SF or 3 CF of RACM. Montana also requires a project design by a Montana-accredited project designer, final visual clearance inspection(s), and air clearance monitoring for all permitted asbestos abatement projects.

A copy of this asbestos survey should be kept on the project during renovation activities and made available to State of Montana representatives upon request.

5.0 LIMITATIONS

This asbestos survey report was prepared based on information obtained during the survey, and interpretation of the laboratory results of bulk samples of building materials collected during the survey. The conclusions of this report are professional opinions based solely upon visual site observations and interpretations of laboratory analyses and field data as described in our report.

This report has been prepared to provide information concerning the various types and estimated quantities of ACBMs present at this site. It includes only those materials that were visible and accessible at the time of our inspection. We did not remove any permanent building enclosures or disassemble any equipment to determine if any ACBMs were present. No samples were collected if the mechanical integrity of the material would be compromised. As a result, additional ACBMs may be present in inaccessible areas (e.g., between walls, beneath floors, etc.) of the buildings. Permanent building enclosures were not opened or disassembled for inspection and additional ACBMs may also be present in these areas.

This survey and report is intended to identify and assess ACBMs. It is not intended to be used for purposes of obtaining bids for removal from abatement contractors.

Our opinions are intended exclusively for use by A&E, LLC. The scope of services provided by Northern may not be appropriate to satisfy the needs of other users, and any use or re-use of this document, or the findings presented herein, is at the sole risk of the user.

The opinions presented herein apply to the site conditions existing at the time of our investigation. Therefore, our opinions and recommendations may not apply to future conditions that may exist at the site that we have not had the opportunity to evaluate.

6.0 REFERENCES

Environmental Protection Agency (EPA)
National Emission Standard for Hazardous Air Pollutants, 40 CFR 61 Subpart M.

Environmental Protection Agency (EPA)
Asbestos Hazard Emergency Response Act (AHERA), 40 CFR 763.

Occupational Safety and Health Administration (OSHA)
Construction Industry Standard (1994), 29 CFR 1926.1101.

State of Montana Asbestos Regulations
Administrative Rules of Montana, Title 17, Chapter 74, Subchapter 3

TABLES

TABLE 1
SUMMARY OF MATERIALS SUSPECTED TO CONTAIN ASBESTOS AND LABORATORY RESULTS
Former Livingston Hospital
504 South 13th Street
Livingston, Montana

Material Number	Material Description	Material Sample Locations	Laboratory Results
D - 1	**Paper Debris**	**East Crawlspace**	**45% Chrysotile**
D - 2	Hard Fitting Debris - White	East Crawlspace	ND
D - 3	**Paper Debris - White**	**Laundry Crawlspace**	**25% Chrysotile**
D - 4	**Paper Debris - Brown**	**Laundry Crawlspace**	**3% Chrysotile**
D - 5	**Paper Debris - Brown & White**	**Dining Area Crawlspace**	**Layer 1 45% Chrysotile / Layer 2 2% Chrysotile**
D - 6	**Magnesia Debris**	**Dining Area Crawlspace**	**5% Amosite / 35% Chrysotile**
F1.1	**Vinyl Sheet Flooring - Tan Tile Pattern (under carpet)**	**Room 023**	Carpet Mastic ND / **VSF 10% Chrysotile** / Mastic: ND
F1.2	Vinyl Sheet Flooring - Beige	Room 011	All Layers ND
F1.3	Vinyl Sheet Flooring - Beige & Brown w/Mastic	Room 104A	All Layers ND
F1.4	Vinyl Sheet Flooring - Purple & Gray w/Mastic	Room 109	All Layers ND
F1.6	Vinyl Sheet Flooring - 12"x12" White Tile Pattern w/Mastic	Room 161	ND
F2.1	12"x12" Vinyl Floor Tile - Beige w/Black Dots	Rooms 019, 020, 024	All Layers ND
F2.2	12'x12" Floor Tile - Pink w/Black Spots	Rooms 007, 009	All Layers ND
F2.3	12"x12" Floor Tile - White w/Gray Specs	Room 010	All Layers ND
F2.4	12"x12" Floor Tile - White w/Gray Marble Pattern	Rooms 002, 029	All Layers ND

Confirmed or Assumed Asbestos Containing Materials in Bold Type

ND = Non Detected
NS = Not Sampled

* Some material numbers used more than once.

TABLE 1
SUMMARY OF MATERIALS SUSPECTED TO CONTAIN ASBESTOS AND LABORATORY RESULTS
Former Livingston Hospital
504 South 13th Street
Livingston, Montana

Material Number	Material Description	Material Sample Locations	Laboratory Results
F2.5	12"x12" Floor Tile - White with Beige Specks w/Yellow Mastic & Leveling Compound	Room 101	All Layers ND
F2.6	**12"x12" Floor Tile - Purple Marbled w/Mastic**	**Rooms 101, 107, 204**	**Tile ND / Mastic 2% Chrysotile**
F2.7	12"x12" Floor Tile - Green Marbled & Mastic	Room 101	All Layers ND
F2.8	**12"x12" Floor Tile - Ivory with Tan Marbling w/Mastic**	**Rooms 133, 138**	**Tile ND / Mastic 5% Chrysotile**
F2.9	12"x12" Floor Tile - White w/Gray Marbled w/Mastic	Rooms 104, 134	All Layers ND
F2.10	12"x12" Floor tile - Lt Blue Marbled w/Mastic	Room 107	All Layers ND
F2.11	**12"x12" Floor Tile - Off-white & Tan Marbled w/Mastic**	**Rooms 145, 163, 174**	**Tile ND / Mastic 3% Chrysotile**
F2.12	**12"x12" Floor Tile - Rose Marbled w/Mastic**	**Rooms 130, 203**	**Tile 2% Chrysotile / Mastic 3% Chrysotile**
F2.13	12"x12" Floor Tile - White w/Green & Brow Specks w/Mastic	Room 202	All Layers ND
F2.14	12"x12" Floor Tile - Brown Marbled & Mastic	Room 202	All Layers ND
F2.15	12"x12" Floor Tile - White with Blue Specks w/Mastic	Room 107	All Layers ND
F2.16	**12'x12" Floor Tile - White & Black Granite w/Mastic**	**Room 151**	**Tile ND / Mastic 5% Chrysotile**

Confirmed or Assumed Asbestos Containing Materials in Bold Type

ND = Non Detected

NS = Not Sampled

* Some material numbers used more than once.

TABLE 1
SUMMARY OF MATERIALS SUSPECTED TO CONTAIN ASBESTOS AND LABORATORY RESULTS
Former Livingston Hospital
504 South 13th Street
Livingston, Montana

Material Number	Material Description	Material Sample Locations	Laboratory Results
F3.1	**9"x9" Floor Tile - Brown with Black Streaks w/Mastic (residual black and brown mastic present on tile)**	**Room 009**	**Residual Mastic 4% Chrysotile / Tile 6% Chrysotile / Mastic 8% Chrysotile**
F3.2	**9"x9" Floor Tile - Lt. Brown with Brown Streaks w/Mastic**	**Room 006**	**Tile 6% Chrysotile / Mastic 5% Chrysotile**
F3.3	**9"x9" Floor Tile - Green w/Mastic**	**Room 029**	**Tile 5% Chrysotile / Mastic 4% Chrysotile**
F3.3*	**9"x9" Floor Tile - Red w/Mastic**	**Room 106**	**Tile 8% Chrysotile / Mastic 5% Chrysotile**
F3.4	**9"x9" Floor Tile - Tan w/Mastic**	**Room 160**	**Tile 5% Chrysotile / Mastic 4% Chrysotile**
F3.4*	**9"x9" Floor Tile - Gray w/Mastic**	**Room 160**	**Tile 5% Chrysotile / Mastic 4% Chrysotile**
F3.5	**9"x9" Floor Tile - Green w/Mastic**	**Room 201**	**Tile: 6% Chrysotile Mastic: 8% Chrysotile**
F5.1	Carpet - Teal w/Mastic	Room 022	All Layers ND
F5.2	Carpet - Blue	Rooms 017, 018	ND
F5.3	Carpet - Brown w/Mastic	Rooms 137, 159, 189	All Layers ND
F5.4	Carpet - Blue w/Mastic	Rooms 160, 162, 190	All Layers ND
F6.1	Leveling Compound	Room 018	ND
F7.1	1"x1" Ceramic Tile - Brown w/Grout	Rooms 164, 172, 185	All Layers ND

Confirmed or Assumed Asbestos Containing Materials in Bold Type

ND = Non Detected
NS = Not Sampled

* Some material numbers used more than once.

TABLE 1
SUMMARY OF MATERIALS SUSPECTED TO CONTAIN ASBESTOS AND LABORATORY RESULTS
Former Livingston Hospital
504 South 13th Street
Livingston, Montana

Material Number	Material Description	Material Sample Locations	Laboratory Results
F8.1	6"x6" Ceramic Tile - Red w/Grout	Rooms 100, 100A	All Layers ND
F9.1	**4"x2' Floor Tile - Brown w/Mastic**	**Rooms 103, 183**	**Tile ND / Mastic 4% Crocidolite**
M3.1	Gypsum Board Assembly	Boiler Room	All Layers ND
M3.2	Sheetrock & Joint Compound - Orig. Building	Rooms 137, 157, 165	All Layers ND
M3.3	Gypsum Board Assembly - Addition	Rooms 015, 016, 106A	All Layers ND
M3.4	Sheetrock & Joint Compound - 1989 Addition	Rooms 184, 185, 188	All Layers ND
M3.5	Gypsum Board - Behind Plaster	Rooms 101, 127, 151	All Layers ND
M4.1	**Transite Wall Board (Assumed ACM)**	**Refrigeration Rooms**	**NS - Assumed**
M5.1	2'x4' Ceiling Panel - Medium Fissure and Pinhole	Room 021	ND
M5.2	2'x4' Ceiling Panel - Heavy Texture, Fissure & Pinholes	Room 024	ND
M5.3	2'x4' Ceiling Panel, Light Texture, Fissure Pinhole	Room 022	ND
M5.4	2'x4' Ceiling Panel - Pinhole and Small Fissure	Room 020	ND
M5.5	2'x4' Ceiling Panel - 5"x5" Pattern	Rooms 017, 018	ND
M5.6	2'x4' Ceiling Panel - Deep Fissure, Pinhole, Light Texture	Rooms 014, 017	ND

Confirmed or Assumed Asbestos Containing Materials in Bold Type

ND = Non Detected
NS = Not Sampled

* Some material numbers used more than once.

TABLE 1
SUMMARY OF MATERIALS SUSPECTED TO CONTAIN ASBESTOS AND LABORATORY RESULTS
Former Livingston Hospital
504 South 13th Street
Livingston, Montana

Material Number	Material Description	Material Sample Locations	Laboratory Results
M5.7	2'x4' Gypsum Board Panel W/Vinyl Cover	Room 002	All Layers ND
M6.1	1'x1' Ceiling Tile - Wood-based, Mechanically Fastened (not suspect)	Basement	NS
M6.2	1'x1' Ceiling Tile - White w/Heavy Fissures & Brown Mastic	Rooms 103, 153	All Layers ND
M6.3	1'x1' Ceiling Tile - Patterned Holes & Brown Mastic	Room 106	All Layers ND
M6.4	1'x1' Ceiling Tile - White w/Heavy Fissures & Black Mastic	Room 194	All Layers ND
M7.1	Plaster Wall System - Over Expanded Metal & Gypsum Board	Rooms 101, 140, 127, 162, 193	ND
M8.1	**Window Caulk - Gray w/White**	**Rooms 146, 149, 155**	**8% Chrysotile**
M8.2	**Window Glazing Compound - White**	**Rooms 106, 196, 201**	**4% Chrysotile**
M8.3	**Window Caulk - White**	**Rooms 106, 196, 201**	**12% Chrysotile**
M8.4	Window Glazing - Brown Vinyl	Rooms 146, 149, 155	ND
M8.5	4"x4" Ceramic Tile - White w/Mastic & Grout	Rooms 164, 172, 185	All Layers ND
M10.1	**Sink Undercoating - Black**	**Rooms 111, 126, 127**	**4% Chrysotile**
M10.2	Sink Undercoating - White	Rooms 157, 158, 195	ND
M10.3	Sink Undercoating - Grey	Rooms 159, 205	ND

Confirmed or Assumed Asbestos Containing Materials in Bold Type

ND = Non Detected
NS = Not Sampled

* Some material numbers used more than once.

TABLE 1
SUMMARY OF MATERIALS SUSPECTED TO CONTAIN ASBESTOS AND LABORATORY RESULTS
Former Livingston Hospital
504 South 13th Street
Livingston, Montana

Material Number	Material Description	Material Sample Locations	Laboratory Results
M12.1	4" Cove Base - Light Brown w/Mastic	Room 022	All Layers ND
M12.2	4" Cove Base - Beige w/White Adhesive	Room 014	All Layers ND
M12.3	4" Black Cove Base w/Brown Adhesive	Room 009	All Layers ND
M12.4	4" Vinyl Cove Base - Brown w/Lt. Brown Mastic	Rooms 104A, 179, 203	All Layers ND
M12.5	Cove Base Mastic - White w/Mastic	Rooms 110, 126, 205	All Layers ND
M12.6	Cove Base Mastic - Yellowish Brown	Room 116	All Layers ND
M16.1	Concrete	Boiler Room	All Layers ND
M16.2	Concrete - Addition	Room 016	All Layers ND
M16.3	Concrete - 1989 Addition	Exterior Foundation Wall	All Layers ND
M17.1	Brick/Mortar	Incinerator Exterior	All Layers ND
M17.2	Firebrick/Mortar	Incinerator Interior	ND
M17.3	Red Clay Block & Mortar	Rooms 101, 163, 170	All Layers ND
M17.4	Light Brown Brick & Mortar - Exterior	Rooms 122, 154, 192	All Layers ND
M18.1	Concrete Block/Mortar	Boiler Room	All Layers ND

Confirmed or Assumed Asbestos Containing Materials in Bold Type

ND = Non Detected
NS = Not Sampled

* Some material numbers used more than once.

TABLE 1
SUMMARY OF MATERIALS SUSPECTED TO CONTAIN ASBESTOS AND LABORATORY RESULTS
Former Livingston Hospital
504 South 13th Street
Livingston, Montana

Material Number	Material Description	Material Sample Locations	Laboratory Results
M19.1	Fiberglass Reinforced Plastic	Room 002	All Layers ND
M19.1*	4"x4" Ceramic Tile - Green w/Mortar and Grout	Rooms 122, 123, 124	All Layers ND
T1.1	Boiler Ribbon Gasket	Large Boiler	ND
T1.2	Boiler Ribbon Gasket - White	Small Boiler	ND
T1.3	Boiler Flange Gasket - Red	Small Boiler	ND
T1.4	Pipe Flange Gasket - White	Small Boiler	ND
T1.5	Flange Gasket - Red	Main Water Line	ND
T2.1	**Mudded Fitting - Original**	**Boiler Room, Room 200**	**12% Chrysotile / 8% Amosite**
T2.2	Mudded Pipe Fitting Insulation on Fiberglass Insulated Straight Run Piping	Boiler Room	ND
T3.1	Metal-foil Faced Fiberglass Straight Run Pipe Insulation on Mechanical System Lines (not suspect)	Boiler Room	NS
T3.2	Paper & Metal-foil Faced Fiberglass Straight Run Pipe Insulation on Domestic System Lines (not suspect)	Boiler Room	NS
T3.3	**Magnesia Straight Run Pipe Insulation**	**Boiler Room**	**12% Chrysotile / 8% Amosite**
T3.4	**Air-Cell Straight Run Pipe Insulation (Assumed ACM)**	**Boiler Room**	**NS - Assumed**
T3.5	**Duplex Straight Run Pipe Insulation**	**Boiler Room**	**5% Chrysotile**

Confirmed or Assumed Asbestos Containing Materials in Bold Type

ND = Non Detected
NS = Not Sampled

* Some material numbers used more than once.

TABLE 1
SUMMARY OF MATERIALS SUSPECTED TO CONTAIN ASBESTOS AND LABORATORY RESULTS
Former Livingston Hospital
504 South 13th Street
Livingston, Montana

Material Number	Material Description	Material Sample Locations	Laboratory Results
T7.1	Boiler Breaching	Boiler Room	ND
T8.1	Vibration Joint Collar Black	Room 029	ND
T9.1	Gray Duct Sealant	Room 016	ND
T11.1	Red Fire Stop	Room 026	ND
T12.1	**Roof Drain Bowl Insulation**	**Room 101**	**15% Chrysotile / 8% Amosite**

Confirmed or Assumed Asbestos Containing Materials in Bold Type

ND = Non Detected

NS = Not Sampled

* Some material numbers used more than once.

TABLE 2
SUMMARY OF CONFIRMED OR ASSUMED ASBESTOS-CONTAINING MATERIALS AND RECOMMENDED RESPONSE ACTION
Former Livingston Hospital
504 South 13th Street
Livingston, Montana

Material Number	Material Description	NESHAP Category	Recommended Response Action
F1.1	Vinyl Sheet Flooring - Tan Tile Pattern	RACM	Retain Accredited Asbestos Abatement Contractor to Remove Prior to Conducting Any Renovation or Demolition Work That Will Impact The Asbestos-Containing Materials
F2.6	12"x12" Floor Tile - Purple Marbled (Tile ND) w/Black Mastic	Category I	
F2.8	12"x12" Floor Tile - Ivory with Tan marbling (Tile ND) w/Black Mastic	Category I	
F2.11	12"x12" Floor Tile - Off White with Tan Marbling (Tile ND) w/Black Mastic	Category I	
F2.12	12"x12" Floor Tile - Rose Marbled w/Black Mastic	Category I	
F2.16	12"x12" Floor Tile - White with Black Granite Pattern (Tile ND) w/Black Mastic	Category I	
F3.1	9"x9" Floor Tile - Brown with Black Streaks w/Black Mastic	Category I	
F3.2	9"x9" Floor Tile - Lt. Brown with Streaks w/Black Mastic	Category I	

Category I Nonfriable ACM such as packings, gaskets, resilient floor covering, and asphalt roofing products.

Category II All nonfriable ACM, excluding Category I materials.

RACM Friable ACM; Category I material that has become friable; Category I material that will be subjected to sanding, grinding, cutting, or abrading; or Category II material that has a high probability of becoming friable.

TABLE 2
SUMMARY OF CONFIRMED OR ASSUMED ASBESTOS-CONTAINING MATERIALS AND RECOMMENDED RESPONSE ACTION
Former Livingston Hospital
504 South 13th Street
Livingston, Montana

Material Number	Material Description	NESHAP Category	Recommended Response Action
F3.3	9"x9" Floor Tile - Green w/Black Mastic	Category I	Retain Accredited Asbestos Abatement Contractor to Remove Prior to Conducting Any Renovation or Demolition Work That Will Impact The Asbestos-Containing Materials
F3.3*	9"x9" Floor Tile - Red w/Black Mastic	Category I	
F3.4	9"x9" Floor Tile - Tan w/Black Mastic	Category I	
F3.4*	9"x9" Floor Tile - Gray w/ Black Mastic	Category I	
F3.5	9"x9" Floor Tile - Green with White Streaks w/Black Mastic	Category I	
F9.1	4"x2' Floor Tile (brown) & Mastic (black)	Category I	
M4.1	Transite Wall Board (Assumed ACM)	Category II	
M8.1	Window Caulk - Gray w/White	Category II	

Category I Nonfriable ACM such as packings, gaskets, resilient floor covering, and asphalt roofing products.

Category II All nonfriable ACM, excluding Category I materials.

RACM Friable ACM; Category I material that has become friable; Category I material that will be subjected to sanding, grinding, cutting, or abrading; or Category II material that has a high probability of becoming friable.

TABLE 2
SUMMARY OF CONFIRMED OR ASSUMED ASBESTOS-CONTAINING MATERIALS AND RECOMMENDED RESPONSE ACTION
Former Livingston Hospital
504 South 13th Street
Livingston, Montana

Material Number	Material Description	NESHAP Category	Recommended Response Action
M8.2	Window Glazing Compound - White	RACM	Retain Accredited Asbestos Abatement Contractor to Remove Prior to Conducting Any Renovation or Demolition Work That Will Impact The Asbestos-Containing Materials
M8.3	Window Caulk - White	Category II	
M10.1	Sink Undercoating - Black	Category II	
T2.1	Mudded Fitting - Original	RACM	
T3.3	Magnesia Straight Run Pipe Insulation	RACM	
T3.4	Air Cell Straight Run Pipe Insulation (Assumed ACM)	RACM	
T3.5	Duplex Straight Run Pipe Insulation	RACM	
T12.1	Roof Drain Bowl Insulation	RACM	

Category I Nonfriable ACM such as packings, gaskets, resilient floor covering, and asphalt roofing products.

Category II All nonfriable ACM, excluding Category I materials.

RACM Friable ACM; Category I material that has become friable; Category I material that will be subjected to sanding, grinding, cutting, or abrading; or Category II material that has a high probability of becoming friable.

TABLE 2
SUMMARY OF CONFIRMED OR ASSUMED ASBESTOS-CONTAINING MATERIALS AND RECOMMENDED RESPONSE ACTION
Former Livingston Hospital
504 South 13th Street
Livingston, Montana

Material Number	Material Description	NESHAP Category	Recommended Response Action
D - 1	Paper Debris in East Crawlspace	RACM	Restrict Access to Asbestos Debris Contaminated Crawlspaces to Authorized Personnel Wearing Appropriate Personal Protective Equipment as Required by OSHA.
D - 3	White Paper Debris in Laundry Crawlspace	RACM	
D - 4	Brown Paper Debris in Laundry Crawlspace	RACM	
D - 5	Brown and White Paper Debris in Dining Area Crawlspace	RACM	
D - 6	Magnesia Debris in Dining Area Crawlspace	RACM	

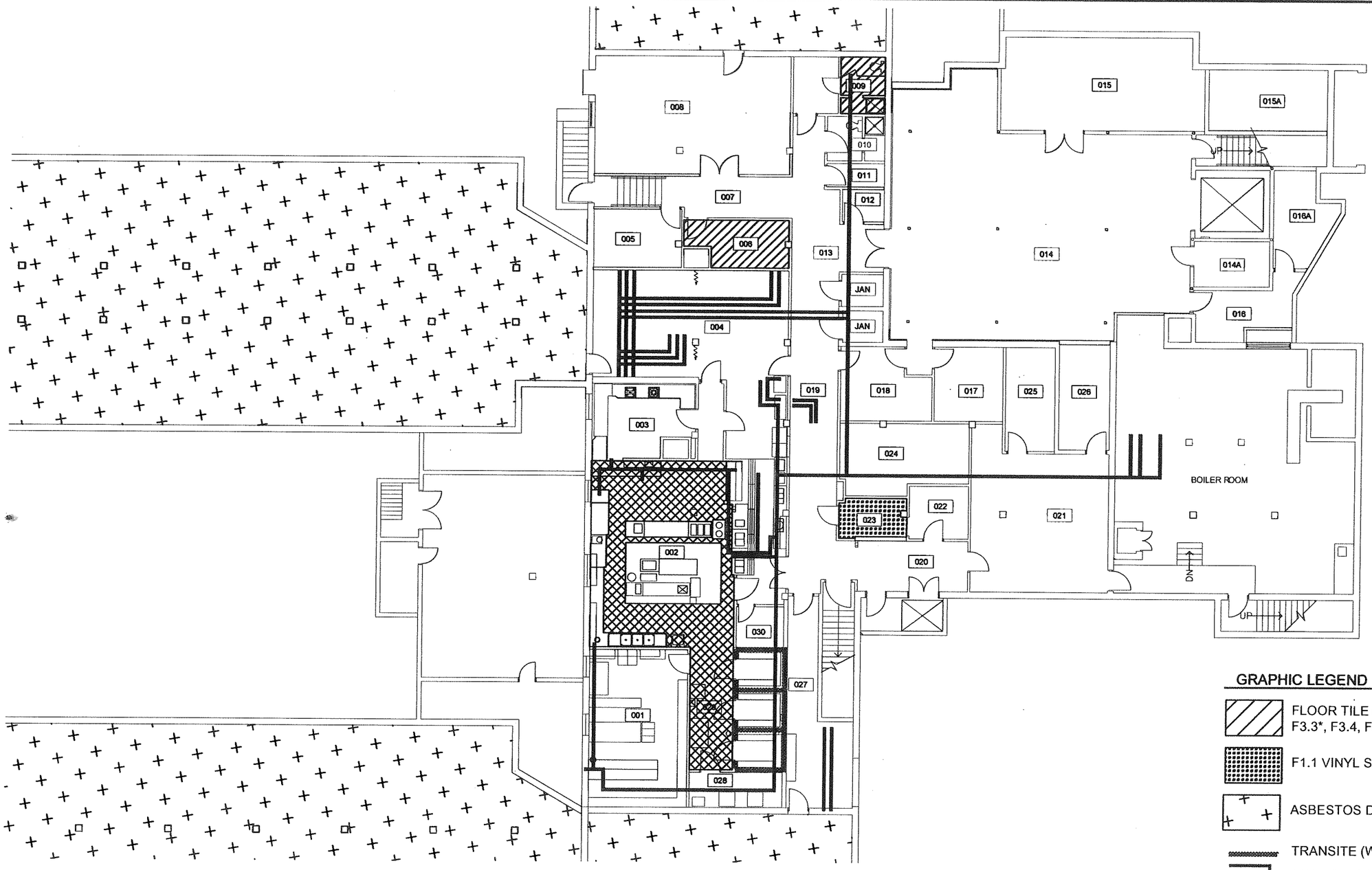
Category I Nonfriable ACM such as packings, gaskets, resilient floor covering, and asphalt roofing products.

Category II All nonfriable ACM, excluding Category I materials.

RACM Friable ACM; Category I material that has become friable; Category I material that will be subjected to sanding, grinding, cutting, or abrading; or Category II material that has a high probability of becoming friable.

FIGURES

Figure Set 1 - Asbestos-Containing Building Material Location Drawings



GRAPHIC LEGEND

- FLOOR TILE (F2.12, F3.1, F3.2, F3.3, F3.3*, F3.4, F3.4*, F3.5)
- F1.1 VINYL SHEET FLOORING
- ASBESTOS DEBRIS
- TRANSITE (WALL AND CEILING)
- ACM THERMAL SYSTEM INSULATION W/ ACM MUDDED JOINTS/ FITTINGS
- ROOF DRAIN BOWL

GROUND FLOOR MATERIAL LOCATION PLAN

SCALE: 1/16" = 1'-0"

NORTHERN INDUSTRIAL HYGIENE, INC.

DATE:	03/08/16
DRAWN BY:	CS
CHK BY:	KO
CAD FILE:	999-3019.dwg
PROJECT NAME:	FORMER LIVINGSTON HOSPITAL
LOCATION:	LIVINGSTON, MT
NIH PROJECT NUMBER:	999-3019

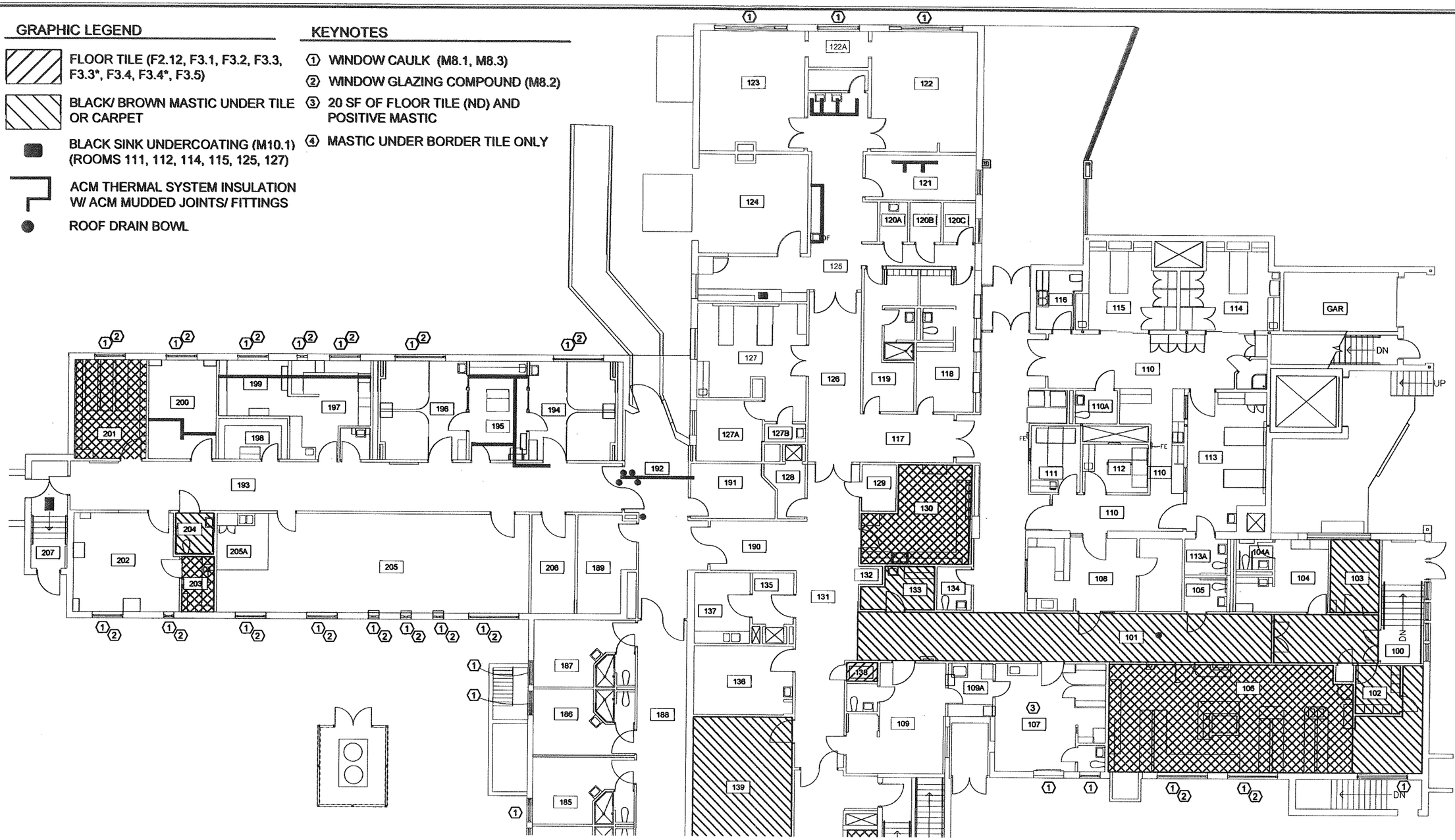
FIG. 1.1: GROUND FLOOR ASBESTOS MATERIAL LOCATION PLAN

GRAPHIC LEGEND

- FLOOR TILE (F2.12, F3.1, F3.2, F3.3, F3.3*, F3.4, F3.4*, F3.5)
- BLACK/ BROWN MASTIC UNDER TILE OR CARPET
- BLACK SINK UNDERCOATING (M10.1) (ROOMS 111, 112, 114, 115, 125, 127)
- ACM THERMAL SYSTEM INSULATION W/ ACM MUDDED JOINTS/ FITTINGS
- ROOF DRAIN BOWL

KEYNOTES

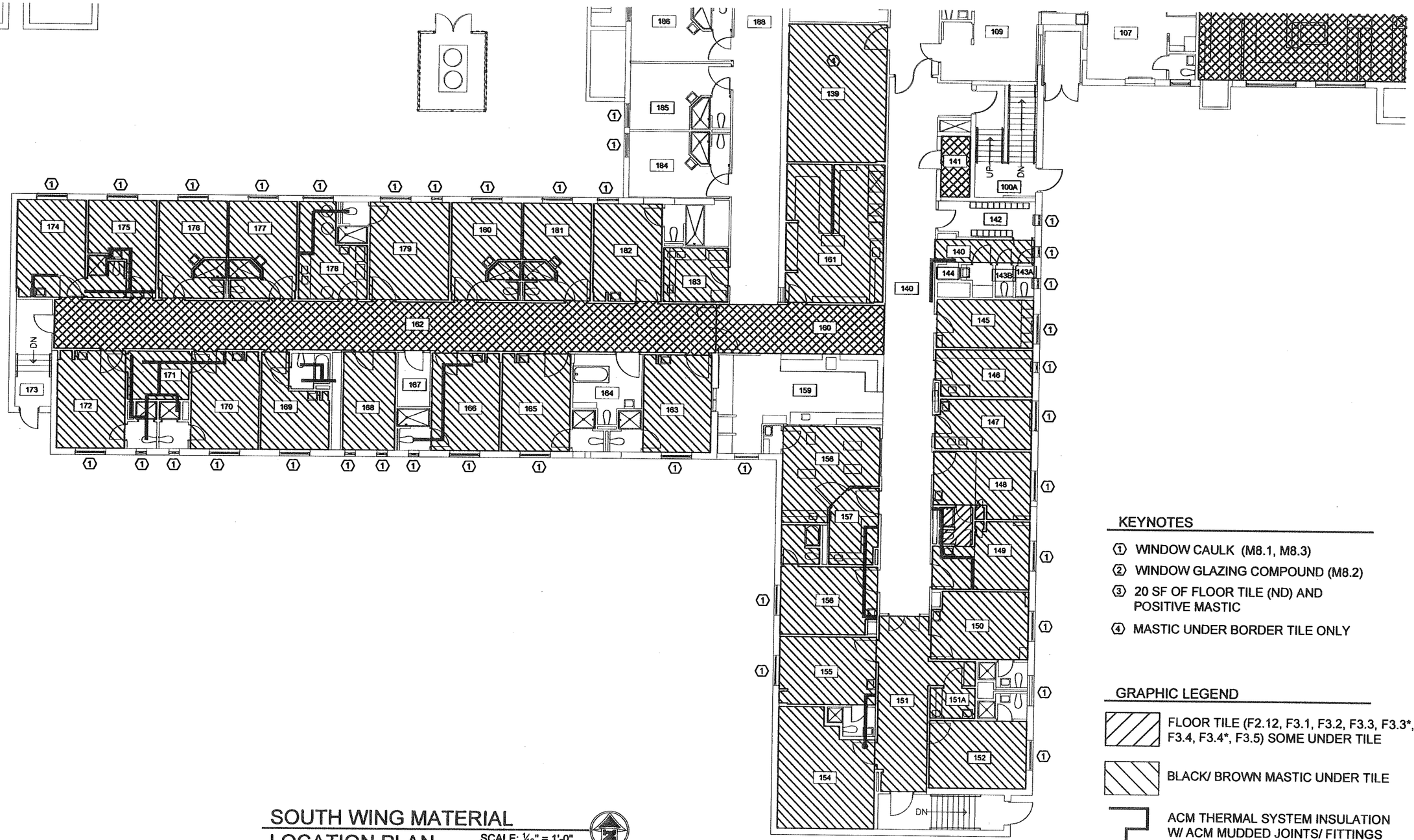
1. WINDOW CAULK (M8.1, M8.3)
2. WINDOW GLAZING COMPOUND (M8.2)
3. 20 SF OF FLOOR TILE (ND) AND POSITIVE MASTIC
4. MASTIC UNDER BORDER TILE ONLY



NORTH WING MATERIAL LOCATION PLAN

SCALE: 1/16" = 1'-0"

NORTHERN INDUSTRIAL HYGIENE, INC.	DATE: 03/08/16 DRAWN BY: CS CHK BY: KO CAD FILE: 999-3019.dwg	PROJECT NAME: FORMER LIVINGSTON HOSPITAL LOCATION: LIVINGSTON, MT NIH PROJECT NUMBER: 999-3019		FIG. 2.1: NORTH WING ASBESTOS MATERIAL LOCATION PLAN



SOUTH WING MATERIAL LOCATION PLAN

SCALE: 1/16" = 1'-0"

KEYNOTES

1. WINDOW CAULK (M8.1, M8.3)
2. WINDOW GLAZING COMPOUND (M8.2)
3. 20 SF OF FLOOR TILE (ND) AND POSITIVE MASTIC
4. MASTIC UNDER BORDER TILE ONLY

GRAPHIC LEGEND

- FLOOR TILE (F2.12, F3.1, F3.2, F3.3, F3.3*, F3.4, F3.4*, F3.5) SOME UNDER TILE
- BLACK/ BROWN MASTIC UNDER TILE
- ACM THERMAL SYSTEM INSULATION W/ ACM MUDDED JOINTS/ FITTINGS
- ROOF DRAIN BOWL

NORTHERN INDUSTRIAL HYGIENE, INC.

DATE:	03/08/16
DRAWN BY:	CS
CHK BY:	KO
CAD FILE:	999-3019.dwg
PROJECT NAME:	FORMER LIVINGSTON HOSPITAL
LOCATION:	LIVINGSTON, MT
NIH PROJECT NUMBER:	999-3019

FIG. 2.2: SOUTH WING ASBESTOS MATERIAL LOCATION PLAN

APPENDIX A

ASBESTOS LABORATORY ANALYSIS REPORTS

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
EMAIL: Rmelgoza@bridgeband.com
NVLAP Lab Code: 200511-0

1/5/2016

Kevin Oliver
Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-

RE: Bulk Asbestos Fiber Analysis; Batch # 16-00005
Project Location *Old Livingston Hospital-Basement*

Dear Kevin Oliver,

Thank you for choosing Northern Industrial Hygiene, Inc. as your laboratory. Enclosed you will find analytical results for the bulk samples submitted to the laboratory.

Northern Industrial Hygiene is accredited by NVLAP Lab Code: 200511-0. Accreditation by NVLAP does not indicate endorsement by NVLAP or any other government agency. All bulk samples are analyzed in accordance with U.S. EPA Method -600/M4-82-020, December 1982 and EPA Method 600/R-93-116, July 1993. "Method for Determination of Asbestos in Bulk Building Materials"(NESHAP, 40 CFR-Part 61) protocol.

Analysis is cross checked through our inter or intra laboratory quality assurance program for verification. The percent values reported are based on calibrated visual estimates by volume unless verification by Point Count is indicated. Test results reported relate only to the samples submitted by the customer to Northern Industrial Hygiene, Inc. Trace amounts of asbestos are below the limit of detection and asbestos fibers with diameters below approximately 0.25 micrometers are not detectable with the Polarized Light Microscopy (PLM) analytical procedure. A trace amount of asbestos is defined as one to five fibers in three slide mounts. Asbestos found in this amount will be reported as "< 1.0%" by PLM analysis.

This report is highly confidential and shall not be reproduced without your written approval and the written approval of Northern Industrial Hygiene, Inc.

Samples are archived for thirty (30) days following analysis. Please contact us if samples need to be archived longer than the standard holding time.

Thank you for using Northern Industrial Hygiene, Inc. If you have any questions or concerns please contact us.

Sincerely,

Jude Cummings

Reviewed by: Jude Cummings

Enclosure: Bulk Sample Results

NORTHERN INDUSTRIAL HYGIENE, INC.
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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00005**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **30**

Client Sample Number: **M3.1A** Lab Sample Number: **16-00005.0001**
Client Sample Description: **Gypsum Board Assembly**
Client Sample Location: **Boiler Room**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White powdery compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	98% Filler and Binder

Layer 2 **White papery material with white powdery residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	90% Cellulose	10% Filler and Binder

Layer 3 **Brown papery on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	15% Cellulose	83% Filler and Binder
	2% Fiberglass	

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M3.1B** Lab Sample Number: **16-00005.0002**
Client Sample Description: **Gypsum Board Assembly**
Client Sample Location: **Boiler Room**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	5% Cellulose	95% Filler and Binder

Layer 2 **White papery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	95% Cellulose	5% Filler and Binder

Layer 3 **Brown papery on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	15% Cellulose	83% Filler and Binder
	2% Fiberglass	

Comments: **Materials distinguishable but inseparable**

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/5/2016**

Jude Cummings

Reviewed 1/5/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00005**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **30**

Client Sample Number: **M3.1C** Lab Sample Number: **16-00005.0003**
Client Sample Description: **Gypsum Board Assembly**
Client Sample Location: **Boiler Room**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	98% Filler and Binder

Layer 2 **White papery material with white powdery residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	88% Cellulose	12% Filler and Binder

Layer 3 **Brown papery on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	15% Cellulose	83% Filler and Binder
	2% Fiberglass	

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M5.1A** Lab Sample Number: **16-00005.0004**
Client Sample Description: **2'x4' Medium Fissure & Pinhole Ceiling Panel**
Client Sample Location: **Room 021**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	30% Cellulose	3% Paint
	20% Mineral Wool and Beads	47% Filler and Binder

Client Sample Number: **M5.1B** Lab Sample Number: **16-00005.0005**
Client Sample Description: **2'x4' Medium Fissure & Pinhole Ceiling Panel**
Client Sample Location: **Room 021**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	30% Cellulose	3% Paint
	20% Mineral Wool and Beads	47% Filler and Binder

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/5/2016**

Jude Cummings

Reviewed 1/5/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00005**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **30**

Client Sample Number: **M5.1C** Lab Sample Number: **16-00005.0006**
Client Sample Description: **2'x4' Medium Fissure & Pinhole Ceiling Panel**
Client Sample Location: **Room 021**
Sample Comments:
Checked If Sample Not Analyzed ☐

Off-white compressed fibrous material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	32% Cellulose	48% Filler and Binder
	20% Mineral Wool and Beads	

Client Sample Number: **T11.1A** Lab Sample Number: **16-00005.0007**
Client Sample Description: **Red Fire Stop**
Client Sample Location: **Room 026**
Sample Comments:
Checked If Sample Not Analyzed ☐

Red soft sticky material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	5% Synthetic	85% Filler and Binder
	10% Cellulose	

Client Sample Number: **T11.1B** Lab Sample Number: **16-00005.0008**
Client Sample Description: **Red Fire Stop**
Client Sample Location: **Room 026**
Sample Comments:
Checked If Sample Not Analyzed ☐

Red soft flexible material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	10% Cellulose	85% Filler and Binder
	5% Synthetic	

Client Sample Number: **T11.1C** Lab Sample Number: **16-00005.0009**
Client Sample Description: **Red Fire Stop**
Client Sample Location: **Room 026**
Sample Comments:
Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/5/2016**

Jude Cummings

Reviewed 1/5/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00005**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **30**

Red soft flexible material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	10% Cellulose	85% Filler and Binder
	5% Synthetic	

Client Sample Number: **F2.1A**
Client Sample Description: **12"x12" VFT - Beige W/Black Dots**
Client Sample Location: **Room 020**
Sample Comments:
Lab Sample Number: **16-00005.0010**
Checked If Sample Not Analyzed ☐

Layer 1 **Tan vinyl with black spots**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Opaque sticky material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Cellulose	97% Filler and Binder

Client Sample Number: **F2.1B**
Client Sample Description: **12"x12" VFT - Beige W/Black Dots**
Client Sample Location: **Room 024**
Sample Comments:
Lab Sample Number: **16-00005.0011**
Checked If Sample Not Analyzed ☐

Layer 1 **Tan vinyl with black spots**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Opaque sticky material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	10% Cellulose	90% Filler and Binder

Client Sample Number: **F2.1C**
Client Sample Description: **12"x12" VFT - Beige W/Black Dots**
Client Sample Location: **Room 019**
Sample Comments:
Lab Sample Number: **16-00005.0012**
Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver 12/30/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Jude Cummings 1/5/2016

Jude Cummings

Reviewed 1/5/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00005**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **30**

Layer 1 **Tan vinyl with black spots**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 **Opaque sticky material with gray residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Client Sample Number: **F5.1A** Lab Sample Number: **16-00005.0013**
Client Sample Description: **Carpet - Teal**
Client Sample Location: **Room 022**
Sample Comments:
Checked If Sample Not Analyzed ☐

Layer 1 **Blue, white and black carpet fibers**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	95% Synthetic	5% Filler and Binder

Layer 2 **Brown mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	6% Synthetic	94% Filler and Binder

Client Sample Number: **F5.1B** Lab Sample Number: **16-00005.0014**
Client Sample Description: **Carpet - Teal**
Client Sample Location: **Room 022**
Sample Comments:
Checked If Sample Not Analyzed ☐

Layer 1 **Blue, white and black carpet fibers**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	98% Synthetic	2% Miscellaneous Particles

Layer 2 **Brown mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	10% Synthetic	90% Filler and Binder

Client Sample Number: **F5.1C** Lab Sample Number: **16-00005.0015**
Client Sample Description: **Carpet - Teal**
Client Sample Location: **Room 022**
Sample Comments:
Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/5/2016**

Jude Cummings

Reviewed 1/5/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00005**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **30**

Layer 1 **Blue, white and black carpet fibers**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	90% Synthetic	4% Miscellaneous Particles
		6% Filler and Binder

Layer 2 **Brown mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	5% Synthetic	95% Filler and Binder

Client Sample Number: **M5.2A** Lab Sample Number: **16-00005.0016**
Client Sample Description: **2'x4' Heavy Texture - Fissure/Pinhole Ceiling Panel**
Client Sample Location: **Room 024**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Cellulose	3% Paint
	15% Mineral Wool and Beads	47% Filler and Binder

Client Sample Number: **M5.2B** Lab Sample Number: **16-00005.0017**
Client Sample Description: **2'x4' Heavy Texture - Fissure/Pinhole Ceiling Panel**
Client Sample Location: **Room 024**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Cellulose	2% Paint
	15% Mineral Wool and Beads	48% Filler and Binder

Client Sample Number: **M5.2C** Lab Sample Number: **16-00005.0018**
Client Sample Description: **2'x4' Heavy Texture - Fissure/Pinhole Ceiling Panel**
Client Sample Location: **Room 024**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	15% Mineral Wool and Beads	3% Paint
	35% Cellulose	47% Filler and Binder

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/5/2016**

Jude Cummings

Reviewed 1/5/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00005**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **30**

Client Sample Number:	**M5.3A**	Lab Sample Number: **16-00005.0019**
Client Sample Description:	**2'x4' Light Texture - Fissure/Pinhole Ceiling Panel**	
Client Sample Location:	**Room 022**	
Sample Comments:	**Materials distinguishable but inseparable**	Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Cellulose	2% Paint
	15% Mineral Wool and Beads	48% Filler and Binder

Client Sample Number:	**M5.3B**	Lab Sample Number: **16-00005.0020**
Client Sample Description:	**2'x4' Light Texture - Fissure/Pinhole Ceiling Panel**	
Client Sample Location:	**Room 022**	
Sample Comments:	**Materials distinguishable but inseparable**	Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Cellulose	3% Paint
	15% Mineral Wool and Beads	47% Filler and Binder

Client Sample Number:	**M5.3C**	Lab Sample Number: **16-00005.0021**
Client Sample Description:	**2'x4' Light Texture - Fissure/Pinhole Ceiling Panel**	
Client Sample Location:	**Room 022**	
Sample Comments:	**Materials distinguishable but inseparable**	Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Cellulose	4% Paint
	15% Mineral Wool and Beads	46% Filler and Binder

Client Sample Number:	**M12.1A**	Lab Sample Number: **16-00005.0022**
Client Sample Description:	**4" Cove Base - Light Brown**	
Client Sample Location:	**Room 022**	
Sample Comments:		Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver 12/30/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Jude Cummings 1/5/2016

Jude Cummings

Reviewed 1/5/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00005**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **30**

Layer 1 **Gray vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Tan mastic with white and papery residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	10% Cellulose	90% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M12.1B**
Client Sample Description: **4" Cove Base - Light Brown**
Client Sample Location: **Room 022**
Sample Comments:

Lab Sample Number: **16-00005.0023**
Checked If Sample Not Analyzed ☐

Layer 1 **Gray vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Tan mastic with white compressed residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Layer 3 **Green paint on tan mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		35% Paint 65% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M12.1C**
Client Sample Description: **4" Cove Base - Light Brown**
Client Sample Location: **Room 022**
Sample Comments:

Lab Sample Number: **16-00005.0024**
Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/5/2016**

Reviewed 1/5/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00005**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **30**

Layer 1 **Gray vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Tan mastic with green paint and white compressed powder**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		15% Paint 85% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Layer 3 **Brown papery material with tan mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	50% Cellulose	50% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M5.4A** Lab Sample Number: **16-00005.0025**
Client Sample Description: **2'x4' Pinhole & Small Fissure Ceiling Panel**
Client Sample Location: **Room 020**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Cellulose 15% Mineral Wool and Beads	2% Paint 48% Filler and Binder

Client Sample Number: **M5.4B** Lab Sample Number: **16-00005.0026**
Client Sample Description: **2'x4' Pinhole & Small Fissure Ceiling Panel**
Client Sample Location: **Room 020**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Cellulose 15% Mineral Wool and Beads	3% Paint 47% Filler and Binder

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/5/2016**

Jude Cummings

Reviewed 1/5/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00005**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **30**

Client Sample Number: **M5.4C** Lab Sample Number: **16-00005.0027**
Client Sample Description: **2'x4' Pinhole & Small Fissure Ceiling Panel**
Client Sample Location: **Room 020**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Cellulose	4% Paint
	15% Mineral Wool and Beads	46% Filler and Binder

Client Sample Number: **F2.2A** Lab Sample Number: **16-00005.0028**
Client Sample Description: **12"x12" Floor Tile - Pink W/Black Spots**
Client Sample Location: **Room 009**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Tan vinyl with black spots**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Opaque mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Client Sample Number: **F2.2B** Lab Sample Number: **16-00005.0029**
Client Sample Description: **12"x12" Floor Tile - Pink W/Black Spots**
Client Sample Location: **Room 009**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Tan vinyl with black spots**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Opaque mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Filler and Binder

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/5/2016**

Reviewed 1/5/2016 by: Jude Cummings

NORTHERN INDUSTRIAL HYGIENE, INC.
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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00005**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **30**

Client Sample Number: **F2.2C**
Client Sample Description: **12"x12" Floor Tile - Pink W/Black Spots**
Client Sample Location: **Room 007**
Sample Comments:

Lab Sample Number: **16-00005.0030**
Checked If Sample Not Analyzed ☐

Layer 1 **Tan vinyl with black spots**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 **Opaque and gray mastic with fibrous residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Synthetic	97% Filler and Binder

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/5/2016**

Jude Cummings

Reviewed 1/5/2016 by: Jude Cummings

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 670-5582
Email: koliver@bridgeband.com
Inspector/Contact: Kevin Oliver

NIH Lab Batch ID:	16-00005
Project Name:	Old Livingston Hospital
Project Number:	999-3019
Date Samples Taken:	12/30/15
Type of Analysis:	PLM

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	5-Day
10 Day:	

For Lab Use Only
Sample(s) Size: Accepted Rejected
Non-Conformance Memo: Yes No
Package Condition: Good Damaged Severe Damage

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
10	F21 A	12"x12" VFT Beige w/ Black Dot	Room 020
11	B	"	024
12	C	"	019
13	F51 A	Teal Carpet	RM 022
14	B	"	"
15	C	"	"
16	M52 A	2'x4' Heavy Texture, Fissure, Pinhole	RM 024
17	B	Ceiling Panel	"
18	C	"	"
19	M53 A	2'x4' Light Texture, Fissure Pinhole	Room 022
20	B	Ceiling Panel	↓
21	C	"	↓
22	M12.1 A	4" Light Brown Cove Base	RM 022
23	B	"	↓
24	C	"	↓
25	M54 A	2'x4' Pinhole And Small Fissure	RM 020
26	B	Ceiling Panel	↓
27	C	"	↓
28	F22 A	12"x12" Pink w/ Black Spots	Rm 009
29	B	Floor tile	"
30	C	"	007

Special Instructions: Analyze Group Method - Stop at First Positive ✓ Yes No

Number of samples shipped this page: 21
Total number of samples shipped: 274

Relinquished By:	Date: 1/4/16	Time: 17:00	Firm: NIH	
Received By:	Date: 1/5/16	Time: 11:50	Firm: NIH Bridgeband	
Analyzed By:	Date: 1-5-16	Time: 13:05	Firm: Lab	

Revised 01/20/15 RIM

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 670-5582
Email: koliver@bridgeband.com
Inspector/Contact: Kevin Oliver

NIH Lab Batch ID:	16-00005
Project Name:	Old Livingston Hospital
Project Number:	999-3019
Date Samples Taken:	12/30/15
Type of Analysis:	PLM

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	5-day
10 Day:	

For Lab Use Only
Sample(s) Size: ~~Accepted~~ Rejected
Non-Conformance Memo: Yes ~~No~~
Package Condition: ~~Good~~ Damaged Severe Damage

Page 1 of 2

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
1	M3.1 A	Gypsum Board Assembly	Boiler Room
2	B	1	1
3	C	1	1
	~~M3.2 A~~	~~Gypsum Board Assembly CR16~~	
	~~B~~	~~Construction~~	
	~~C~~	~~1~~	
4	M5.1 A	2'x4' Medium Fissure And Pinhole	Room 021
5	B	1 Ceiling Panel	1
6	C	1	1
7	T11 1 A	Red Fire Stop	RM 026
8	B	1	1
9	C	1	1
	M7.1 A	Plaster on Expanded Metal	
	B		
	C		
	D		
	E		
	F		
	G		

Special Instructions: Analyze Group Method - Stop at First Positive ✓ Yes No

Number of samples shipped this page: 9

Total number of samples shipped: 274

Relinquished By:	Date: 1/4/16	Time: 17:00	Firm: NIH
Received By:	Date: 1/5/16	Time: 11:50	Firm: NIH Billings
Analyzed By:	Date: 1-5-16	Time: 13:05	Firm: Lab

Revised 01/20/15 RIM

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EMAIL: Rmelgoza@bridgeband.com
NVLAP Lab Code: 200511-0

1/5/2016

Kevin Oliver
Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-

RE: Bulk Asbestos Fiber Analysis; Batch # 16-00006
Project Location *Old Livingston Hospital-Basement*

Dear Kevin Oliver,

Thank you for choosing Northern Industrial Hygiene, Inc. as your laboratory. Enclosed you will find analytical results for the bulk samples submitted to the laboratory.

Northern Industrial Hygiene is accredited by NVLAP Lab Code: 200511-0. Accreditation by NVLAP does not indicate endorsement by NVLAP or any other government agency. All bulk samples are analyzed in accordance with U.S. EPA Method -600/M4-82-020, December 1982 and EPA Method 600/R-93-116, July 1993. "Method for Determination of Asbestos in Bulk Building Materials"(NESHAP, 40 CFR-Part 61) protocol.

Analysis is cross checked through our inter or intra laboratory quality assurance program for verification. The percent values reported are based on calibrated visual estimates by volume unless verification by Point Count is indicated. Test results reported relate only to the samples submitted by the customer to Northern Industrial Hygiene, Inc. Trace amounts of asbestos are below the limit of detection and asbestos fibers with diameters below approximately 0.25 micrometers are not detectable with the Polarized Light Microscopy (PLM) analytical procedure. A trace amount of asbestos is defined as one to five fibers in three slide mounts. Asbestos found in this amount will be reported as "< 1.0%" by PLM analysis.

This report is highly confidential and shall not be reproduced without your written approval and the written approval of Northern Industrial Hygiene, Inc.

Samples are archived for thirty (30) days following analysis. Please contact us if samples need to be archived longer than the standard holding time.

Thank you for using Northern Industrial Hygiene, Inc. If you have any questions or concerns please contact us.

Sincerely,

Jude Cummings

Reviewed by: Jude Cummings

Enclosure: Bulk Sample Results

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00006**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Client Sample Number: **F5.2A**
Client Sample Description: **Carpet - Blue**
Client Sample Location: **Room 18**
Sample Comments: **Materials distinguishable but inseparable**
Lab Sample Number: **16-00006.0001**
Checked If Sample Not Analyzed ☐

Blue, white and black carpet fibers with tan mastic residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	92% Synthetic	3% Miscellaneous Materials
		5% Filler and Binder

Client Sample Number: **F5.2B**
Client Sample Description: **Carpet - Blue**
Client Sample Location: **Room 18**
Sample Comments: **Materials distinguishable but inseparable**
Lab Sample Number: **16-00006.0002**
Checked If Sample Not Analyzed ☐

Blue, white and black carpet fibers with tan mastic residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	92% Synthetic	8% Filler and Binder

Client Sample Number: **F5.2C**
Client Sample Description: **Carpet - Blue**
Client Sample Location: **Room 17**
Sample Comments: **Materials distinguishable but inseparable**
Lab Sample Number: **16-00006.0003**
Checked If Sample Not Analyzed ☐

Blue, white and black carpet fibers with tan mastic residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	90% Synthetic	2% Miscellaneous Particles
		8% Filler and Binder

Client Sample Number: **F1.1A**
Client Sample Description: **Vinyl Sheet Floor - Tan Tile Pattern**
Client Sample Location: **Room 23**
Sample Comments:
Lab Sample Number: **16-00006.0004**
Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver 12/30/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Jude Cummings 1/5/2016

Reviewed 1/5/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00006**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Layer 1 **Medium brown carpet mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	6% Synthetic	94% Filler and Binder

Layer 2 **Medium brown vinyl with white fibrous backing**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
10% Chrysotile Asbestos		35% Filler and Binder
		55% Vinyl Filler and Binder

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F1.1B**
Client Sample Description: **Vinyl Sheet Floor - Tan Tile Pattern**
Client Sample Location: **Room 23**
Sample Comments:

Lab Sample Number: **16-00006.0005**
Checked If Sample Not Analyzed ☐

Layer 1 **Medium brown carpet mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	8% Synthetic	92% Filler and Binder

Layer 2 **Vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
Not Analyzed Per Client		

Client Sample Number: **F1.1C**
Client Sample Description: **Vinyl Sheet Floor - Tan Tile Pattern**
Client Sample Location: **Room 23**
Sample Comments:

Lab Sample Number: **16-00006.0006**
Checked If Sample Not Analyzed ☐

Layer 1 **Medium brown carpet mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	6% Synthetic	94% Filler and Binder

Layer 2 **Vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
Not Analyzed Per Client		

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/5/2016**

Jude Cummings

Reviewed 1/5/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00006**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Client Sample Number: **F6.1A** Lab Sample Number: **16-00006.0007**
Client Sample Description: **Leveling Compound**
Client Sample Location: **Room 18**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White compressed powdery material with tan mastic residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Synthetic	97% Filler and Binder

Client Sample Number: **F6.1B** Lab Sample Number: **16-00006.0008**
Client Sample Description: **Leveling Compound**
Client Sample Location: **Room 18**
Sample Comments: Checked If Sample Not Analyzed ☐

White compressed powdery material with tan mastic residueTan mastic with white powdery resi

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Synthetic	97% Filler and Binder

Client Sample Number: **F6.1C** Lab Sample Number: **16-00006.0009**
Client Sample Description: **Leveling Compound**
Client Sample Location: **Room 18**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White compressed powdery material with tan mastic residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Synthetic	97% Filler and Binder

Client Sample Number: **M5.5A** Lab Sample Number: **16-00006.0010**
Client Sample Description: **2' X 4' - 5"x5" Pattern Ceiling Panel**
Client Sample Location: **Room 18**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Cellulose	2% Paint
	15% Mineral Wool and Beads	48% Filler and Binder

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/8/2016**

Jude Cummings
Reviewed 1/5/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00006**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Client Sample Number:	**M5.5B**	Lab Sample Number: **16-00006.0011**
Client Sample Description:	**2' X 4' - 5"x5" Pattern Ceiling Panel**	
Client Sample Location:	**Room 18**	
Sample Comments:	**Materials distinguishable but inseparable**	Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	30% Cellulose	1% Paint
	15% Mineral Wool and Beads	54% Filler and Binder

Client Sample Number:	**M5.5C**	Lab Sample Number: **16-00006.0012**
Client Sample Description:	**2' X 4' - 5"x5" Pattern Ceiling Panel**	
Client Sample Location:	**Room 17**	
Sample Comments:	**Materials distinguishable but inseparable**	Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	30% Cellulose	4% Paint
	15% Mineral Wool and Beads	51% Filler and Binder

Client Sample Number:	**M16.2A**	Lab Sample Number: **16-00006.0013**
Client Sample Description:	**Concrete**	
Client Sample Location:	**Room 016 - Addition**	
Sample Comments:	**Materials distinguishable but inseparable**	Checked If Sample Not Analyzed ☐

Pieces of white paint mixed with white gritty material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		6% Paint
		70% Aggregate
		24% Filler and Binder

Client Sample Number:	**M16.2B**	Lab Sample Number: **16-00006.0014**
Client Sample Description:	**Concrete**	
Client Sample Location:	**Room 016 - Addition**	
Sample Comments:	**Materials distinguishable but inseparable**	Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver 12/30/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Jude Cummings 1/8/2016

Jude Cummings

Reviewed 1/5/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00006**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

White paint on white gritty compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		10% Paint 70% Aggregate 20% Filler and Binder

Client Sample Number: **M16.2C**
Client Sample Description: **Concrete**
Client Sample Location: **Room 016 - Addition**
Sample Comments: **Materials distinguishable but inseparable**
Lab Sample Number: **16-00006.0015**
Checked If Sample Not Analyzed ☐

White paint on off-white gritty material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		5% Paint 80% Aggregate 15% Filler and Binder

Client Sample Number: **M3.3A**
Client Sample Description: **Gypsum Board Assembly**
Client Sample Location: **Room 016A - Addition**
Sample Comments:
Lab Sample Number: **16-00006.0016**
Checked If Sample Not Analyzed ☐

Layer 1 **White paint on white compressed powder**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Paint 70% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Layer 2 **Gray paint on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	30% Paint 68% Filler and Binder

Comments: **Materials distinguishable but inseparable**

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/8/2016**

Jude Cummings

Reviewed 1/5/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00006**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Layer 3 **Gray and brown paper on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	20% Cellulose	77% Filler and Binder
	3% Fiberglass	

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M3.3B** Lab Sample Number: **16-00006.0017**
Client Sample Description: **Gypsum Board Assembly**
Client Sample Location: **Room 016 - Addition**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White paint on white compressed powder**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	25% Paint
		73% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Gray paint on brown papery on white compressed powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	20% Cellulose	3% Paint
	2% Fiberglass	75% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M3.3C** Lab Sample Number: **16-00006.0018**
Client Sample Description: **Gypsum Board Assembly**
Client Sample Location: **Room 015 - Addition**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/8/2016**

Jude Cummings

Reviewed 1/5/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00006**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Layer 1 **White paint on white compressed powder**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	25% Paint
		73% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Layer 2 **White papery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	88% Cellulose	12% Filler and Binder

Layer 3 **Gray and brown papery on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	20% Cellulose	77% Filler and Binder
	3% Fiberglass	

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M12.2A** Lab Sample Number: **16-00006.0019**
Client Sample Description: **4" Beige Cove Base W/White Adhesive**
Client Sample Location: **Room 014**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Off-white vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **White mastic with white powdery residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M12.2B** Lab Sample Number: **16-00006.0020**
Client Sample Description: **4" Beige Cove Base W/White Adhesive**
Client Sample Location: **Room 014**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/8/2016**

Reviewed 1/5/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00006**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Layer 1 **Off-white vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **White mastic with white powdery residue and paper**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	5% Cellulose	95% Filler and Binder

Client Sample Number: **M12.2C** Lab Sample Number: **16-00006.0021**
Client Sample Description: **4" Beige Cove Base W/White Adhesive**
Client Sample Location: **Room 014**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Off-white vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **White mastic with white compressed powdery residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	98% Filler and Binder

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/8/2016**

Jude Cummings

Reviewed 1/5/2016 by: Jude Cummings

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 670-5582
Email: koliver@bridgeband.com
Inspector/Contact: Kevin Oliver

NIH Lab Batch ID:	16-00006
Project Name:	Old Livingston Hospital
Project Number:	999-3019
Date Samples Taken:	12/30/15
Type of Analysis:	PLM

For Lab Use Only
Sample(s) Size: Accepted / Rejected
Non-Conformance Memo: Yes / No
Package Condition: Good / Damaged / Severe Damage

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	5-Day
10 Day:	

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
1	F5.2 A	Blue Carpet	Rm 18
2	B	"	" 18
3	C	"	" 17
4	F1.1 A	Tan tile Pattern Vinyl Sheet	Rm 23
5	B	" " Floor	"
6	C	" "	"
7	F6.1 A	Leveling Compound	Rm 18
8	B	" "	"
9	C	" "	"
10	M5.5 A	2'x4' 5'x5' Pattern Ceiling Panel	Rm 18
11	B	" "	" 18
12	C	" "	" 17
13	M16.2 A	Concrete - Addition	Rm 016
14	B	" "	"
15	C	" "	"
16	M3.3 A	Gypsum Board Assembly -	Room 016A
17	B	" " Addition	" 016
18	C	" "	" 015
19	M12.2 A	4" Base Cove Base w/ white	Room 014
20	B	" " Adhesive	"
21	C	" "	"

Special Instructions: Analyze Group Method - Stop at First Positive ✓ Yes No
Number of samples shipped this page: 21
Total number of samples shipped: ~~21~~ 274

Relinquished By:	Date: 1/4/16	Time: 12:00	Firm: NIH
Received By:	Date: 1/5/16	Time: 11:50	Firm: NIH BMS
Analyzed By:	Date: 1-6-16	Time: 11:25	Firm: LAB

Revised 01/20/15 RtM

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
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EMAIL: Rmelgoza@bridgeband.com
NVLAP Lab Code: 200511-0

1/9/2016

Kevin Oliver
Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-

RE: Bulk Asbestos Fiber Analysis; Batch # 16-00007
Project Location *Old Livingston Hospital-Basement*

Dear Kevin Oliver,

Thank you for choosing Northern Industrial Hygiene, Inc. as your laboratory. Enclosed you will find analytical results for the bulk samples submitted to the laboratory.

Northern Industrial Hygiene is accredited by NVLAP Lab Code: 200511-0. Accreditation by NVLAP does not indicate endorsement by NVLAP or any other government agency. All bulk samples are analyzed in accordance with U.S. EPA Method -600/M4-82-020, December 1982 and EPA Method 600/R-93-116, July 1993. "Method for Determination of Asbestos in Bulk Building Materials"(NESHAP, 40 CFR-Part 61) protocol.

Analysis is cross checked through our inter or intra laboratory quality assurance program for verification. The percent values reported are based on calibrated visual estimates by volume unless verification by Point Count is indicated. Test results reported relate only to the samples submitted by the customer to Northern Industrial Hygiene, Inc. Trace amounts of asbestos are below the limit of detection and asbestos fibers with diameters below approximately 0.25 micrometers are not detectable with the Polarized Light Microscopy (PLM) analytical procedure. A trace amount of asbestos is defined as one to five fibers in three slide mounts. Asbestos found in this amount will be reported as "< 1.0%" by PLM analysis.

This report is highly confidential and shall not be reproduced without your written approval and the written approval of Northern Industrial Hygiene, Inc.

Samples are archived for thirty (30) days following analysis. Please contact us if samples need to be archived longer than the standard holding time.

Thank you for using Northern Industrial Hygiene, Inc. If you have any questions or concerns please contact us.

Sincerely,

Jude Cummings

Reviewed by: Jude Cummings

Enclosure: Bulk Sample Results

NORTHERN INDUSTRIAL HYGIENE, INC.
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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00007**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **31**

Client Sample Number: **M5.6A** Lab Sample Number: **16-00007.0001**
Client Sample Description: **2' X 4' Deep Fissure/Pinhole/Light Texture Panel**
Client Sample Location: **Room 14**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	30% Cellulose	2% Paint
	15% Mineral Wool and Beads	53% Filler and Binder

Client Sample Number: **M5.6B** Lab Sample Number: **16-00007.0002**
Client Sample Description: **2' X 4' Deep Fissure/Pinhole/Light Texture Panel**
Client Sample Location: **Room 14**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	30% Cellulose	5% Paint
	15% Mineral Wool and Beads	50% Filler and Binder

Client Sample Number: **M5.6C** Lab Sample Number: **16-00007.0003**
Client Sample Description: **2' X 4' Deep Fissure/Pinhole/Light Texture Panel**
Client Sample Location: **Room 07**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White paint on off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	30% Cellulose	4% Paint
	15% Mineral Wool and Beads	51% Filler and Binder

Client Sample Number: **T9.1A** Lab Sample Number: **16-00007.0004**
Client Sample Description: **Duct Sealant - Gray**
Client Sample Location: **Room 016**
Sample Comments: Checked If Sample Not Analyzed ☐

Dark gray non-fibrous firm material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/9/2016**

Jude Cummings

Reviewed 1/9/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00007**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **31**

Client Sample Number: **T9.1B** Lab Sample Number: **16-00007.0005**
Client Sample Description: **Duct Sealant - Gray**
Client Sample Location: **Room 016**
Sample Comments: Checked If Sample Not Analyzed ☐

Dark gray non-fibrous firm material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Filler and Binder

Client Sample Number: **T9.1C** Lab Sample Number: **16-00007.0006**
Client Sample Description: **Duct Sealant - Gray**
Client Sample Location: **Room 016**
Sample Comments: Checked If Sample Not Analyzed ☐

Dark gray non-fibrous firm material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Client Sample Number: **F1.2A** Lab Sample Number: **16-00007.0007**
Client Sample Description: **Vinyl Sheet Flooring - Beige**
Client Sample Location: **Room 11**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 Light brown swirl pattern vinyl

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 Tan sticky material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	98% Filler and Binder

Client Sample Number: **F1.2B** Lab Sample Number: **16-00007.0008**
Client Sample Description: **Vinyl Sheet Flooring - Beige**
Client Sample Location: **Room 11**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/9/2016**

Jude Cummings

Reviewed 1/9/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00007**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **31**

Layer 1 **Light brown swirl pattern vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Tan and black sticky material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	2% Asphalt Filler and Binder 96% Filler and Binder

Client Sample Number: **F1.2C** Lab Sample Number: **16-00007.0009**
Client Sample Description: **Vinyl Sheet Flooring - Beige**
Client Sample Location: **Room 11**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Light brown swirl pattern vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Tan sticky material with gritty residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	10% Miscellaneous Materials 88% Filler and Binder

Client Sample Number: **F2.3A** Lab Sample Number: **16-00007.0010**
Client Sample Description: **12"x12" White W/Gray Specks FloorTile**
Client Sample Location: **Room 10**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 **Opaque sticky material with gray residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Cellulose	10% Miscellaneous Materials 87% Filler and Binder

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/9/2016**

Jude Cummings

Reviewed 1/9/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00007**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **31**

Client Sample Number: **F2.3B** Lab Sample Number: **16-00007.0011**
Client Sample Description: **12"x12" White W/Gray Specks FloorTile**
Client Sample Location: **Room 10**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 **Opaque sticky material with gray residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	5% Cellulose	10% Miscellaneous Materials 85% Filler and Binder

Client Sample Number: **F2.3C** Lab Sample Number: **16-00007.0012**
Client Sample Description: **12"x12" White W/Gray Specks FloorTile**
Client Sample Location: **Room 10**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Opaque sticky material with gray residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	15% Miscellaneous Materials 83% Filler and Binder

Client Sample Number: **M19.1A** Lab Sample Number: **16-00007.0013**
Client Sample Description: **Fiberglass Reinforced Plastic**
Client Sample Location: **Room 002**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/9/2016**

Jude Cummings
Reviewed 1/9/2016 by: Jude Cummings

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00007**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **31**

Layer 1 **Medium brown non-fibrous stiff material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Layer 2 **Clear sticky material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Client Sample Number: **M19.1B** Lab Sample Number: **16-00007.0014**
Client Sample Description: **Fiberglass Reinforced Plastic**
Client Sample Location: **Room 002**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Medium brown non-fibrous stiff material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Layer 2 **Opaque sticky material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Filler and Binder

Client Sample Number: **M19.1C** Lab Sample Number: **16-00007.0015**
Client Sample Description: **Fiberglass Reinforced Plastic**
Client Sample Location: **Room 002**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Medium brown non-fibrous stiff material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Layer 2 **Opaque sticky material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Cellulose	97% Filler and Binder

Client Sample Number: **F3.1A** Lab Sample Number: **16-00007.0016**
Client Sample Description: **9"x9" Floor Tile - Brown W/Black Streaks**
Client Sample Location: **Room 009**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/9/2016**

Jude Cummings
Reviewed 1/9/2016 by: Jude Cummings

NORTHERN INDUSTRIAL HYGIENE, INC.
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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00007**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **31**

Layer 1 **Dark brown and black residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
4% Chrysotile Asbestos	5% Cellulose	30% Filler and Binder
		61% Asphalt Filler and Binder

Layer 2 **Brown, gray and black vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
6% Chrysotile Asbestos		30% Aggregate
		64% Vinyl Filler and Binder

Layer 3 **Black asphalt**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
8% Chrysotile Asbestos	2% Cellulose	90% Asphalt Filler and Binder

Client Sample Number: **F3.1B** Lab Sample Number: **16-00007.0017**
Client Sample Description: **9"x9" Floor Tile - Brown W/Black Streaks**
Client Sample Location: **Room 009**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **F3.1C** Lab Sample Number: **16-00007.0018**
Client Sample Description: **9"x9" Floor Tile - Brown W/Black Streaks**
Client Sample Location: **Room 009**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **M12.3A** Lab Sample Number: **16-00007.0019**
Client Sample Description: **4" Black Cove Base W/Brown Adhesive**
Client Sample Location: **Room 009**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Black vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Various shades of brown brittle material with paint residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		98% Filler and Binder
		2% Paint

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/9/2016**

Jude Cummings

Reviewed 1/9/2016 by: Jude Cummings

NORTHERN INDUSTRIAL HYGIENE, INC.
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OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00007**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **31**

Client Sample Number: **M12.3B** Lab Sample Number: **16-00007.0020**
Client Sample Description: **4" Black Cove Base W/Brown Adhesive**
Client Sample Location: **Room 009**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Black vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	100% Vinyl Filler and Binder

Layer 2 **Various shades of brown brittle material with paint residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		1% Paint 99% Filler and Binder

Client Sample Number: **M12.3C** Lab Sample Number: **16-00007.0021**
Client Sample Description: **4" Black Cove Base W/Brown Adhesive**
Client Sample Location: **Room 009**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Black vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Various shades of brown brittle material with paint residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		2% Paint 98% Filler and Binder

Client Sample Number: **F3.2A** Lab Sample Number: **16-00007.0022**
Client Sample Description: **9"x9" Floor Tile/Mastic - Light Brown W/Streaks**
Client Sample Location: **Room 006**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/9/2016**

Jude Cummings

Reviewed 1/9/2016 by: Jude Cummings

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

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OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00007**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **31**

Layer 1 **Brown streaked vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
6% Chrysotile Asbestos		30% Aggregate 64% Vinyl Filler and Binder

Layer 2 **Black Mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
5% Chrysotile Asbestos	5% Cellulose	90% Asphalt Filler and Binder

Client Sample Number: **F3.2B** Lab Sample Number: **16-00007.0023**
Client Sample Description: **9"x9" Floor Tile/Mastic - Light Brown W/Streaks**
Client Sample Location: **Room 006**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **F3.2C** Lab Sample Number: **16-00007.0024**
Client Sample Description: **9"x9" Floor Tile/Mastic - Light Brown W/Streaks**
Client Sample Location: **Room 006**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **F2.4A** Lab Sample Number: **16-00007.0025**
Client Sample Description: **12"x12" Floor Tile - White W/Gray Marble Pattern**
Client Sample Location: **Room 002**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White streaked vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 **Orange mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Cellulose	97% Filler and Binder

Client Sample Number: **F2.4B** Lab Sample Number: **16-00007.0026**
Client Sample Description: **12"x12" Floor Tile - White W/Gray Marble Pattern**
Client Sample Location: **Room 002**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver 12/30/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Jude Cummings 1/9/2016

Jude Cummings

Reviewed 1/9/2016 by: Jude Cummings

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00007**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **31**

Layer 1 **White streaked vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	30% Aggregate
		69% Vinyl Filler and Binder

Layer 2 **Orange mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Cellulose	3% Miscellaneous Materials
		94% Filler and Binder

Client Sample Number: **F2.4C** Lab Sample Number: **16-00007.0027**
Client Sample Description: **12"x12" Floor Tile - White W/Gray Marble Pattern**
Client Sample Location: **Room 029**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White streaked vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Orange and black mastics**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Cellulose	12% Asphalt Filler and Binder
		85% Filler and Binder

Client Sample Number: **M5.7A** Lab Sample Number: **16-00007.0028**
Client Sample Description: **2'x4' Gypsum Board Panel**
Client Sample Location: **Room 002**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/9/2016**

Jude Cummings
Reviewed 1/9/2016 by: Jude Cummings

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00007**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **31**

Layer 1 **White shiney thin material on white fibers**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	40% Cellulose	60% Coating

Comments: **Materials distinguishable but inseparable**

Layer 2 **Brown papery on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	18% Cellulose	80% Filler and Binder
	2% Fiberglass	

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M5.7B** Lab Sample Number: **16-00007.0029**
Client Sample Description: **2'x4' Gypsum Board Panel**
Client Sample Location: **Room 002**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White shiney thin material on white fibers**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Cellulose	65% Coating

Comments: **Materials distinguishable but inseparable**

Layer 2 **Brown papery on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	18% Cellulose	80% Filler and Binder
	2% Fiberglass	

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M5.7C** Lab Sample Number: **16-00007.0030**
Client Sample Description: **2'x4' Gypsum Board Panel**
Client Sample Location: **Room 002**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/9/2016**

Reviewed 1/9/2016 by: Jude Cummings

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Billings, MT • Helena, MT • Seattle, WA

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00007**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **31**

Layer 1 **White shiney thin material on white fibers**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Cellulose	65% Coating

Comments: **Materials distinguishable but inseparable**

Layer 2 **Brown papery on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	20% Cellulose	77% Filler and Binder
	3% Fiberglass	

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **T8.1A** Lab Sample Number: **16-00007.0031**
Client Sample Description: **Vibration Joint Collar - Black**
Client Sample Location: **Room 029**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

Black flexible material with white fibers with sticky residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Synthetic	65% Filler and Binder

Client Sample Number: **T8.1B** Lab Sample Number: **16-00007.0032**
Client Sample Description: **Vibration Joint Collar - Black**
Client Sample Location: **Room 029**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

Black flexible material with white fibers with sticky residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Synthetic	65% Filler and Binder

Client Sample Number: **T8.1C** Lab Sample Number: **16-00007.0033**
Client Sample Description: **Vibration Joint Collar - Black**
Client Sample Location: **Room 029**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

Black flexible material with white fibers with sticky residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Synthetic	64% Filler and Binder
	1% Cellulose	

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/9/2016**

Jude Cummings

Reviewed 1/9/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00007**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **31**

Client Sample Number: **F3.3A** Lab Sample Number: **16-00007.0034**
Client Sample Description: **9"x9" Floor Tile/Mastic - Green**
Client Sample Location: **Room 029**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Green streaked vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
5% Chrysotile Asbestos		30% Aggregate
		65% Vinyl Filler and Binder

Layer 2 **Black and brown mastics**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
4% Chrysotile Asbestos	1% Synthetic	30% Filler and Binder
	2% Cellulose	63% Asphalt Filler and Binder

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F3.3B** Lab Sample Number: **16-00007.0035**
Client Sample Description: **9"x9" Floor Tile/Mastic - Green**
Client Sample Location: **Room 029**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **F3.3C** Lab Sample Number: **16-00007.0036**
Client Sample Description: **9"x9" Floor Tile/Mastic - Green**
Client Sample Location: **Room 029**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **F3.4A** Lab Sample Number: **16-00007.0037**
Client Sample Description: **9"x9" Floor Tile - Tan**
Client Sample Location: **Room 029**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/9/2016**

Jude Cummings

Reviewed 1/9/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Basement*

NIH Batch Number: **16-00007**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **31**

Layer 1 **Tan vinyl with black pitts**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
2% Chrysotile Asbestos		30% Aggregate
		68% Vinyl Filler and Binder

Layer 2 **Brown and black mastics**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
5% Chrysotile Asbestos	2% Cellulose	35% Filler and Binder
		58% Asphalt Filler and Binder

Client Sample Number:	**F3.4B**	Lab Sample Number: **16-00007.0038**
Client Sample Description:	**9"x9" Floor Tile - Tan**	
Client Sample Location:	**Room 029**	
Sample Comments:	**Not Analyzed Per Client Request**	Checked If Sample Not Analyzed ☑

Client Sample Number:	**F3.4C**	Lab Sample Number: **16-00007.0039**
Client Sample Description:	**9"x9" Floor Tile - Tan**	
Client Sample Location:	**Room 029**	
Sample Comments:	**Not Analyzed Per Client Request**	Checked If Sample Not Analyzed ☑

Sampled by: Kevin Oliver	**12/30/2015**	
Received by: Regina Mirabal	**1/5/2016**	
Analyzed by: Jude Cummings	**1/9/2016**	

Jude Cummings

Reviewed 1/9/2016 by: Jude Cummings

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 670-5582
Email: koliver@bridgeband.com
Inspector/Contact: Kevin Oliver

NIH Lab Batch ID:	16-00007
Project Name:	Old Livingston Hospital
Project Number:	999-3079
Date Samples Taken:	12/30/15
Type of Analysis:	PLM

For Lab Use Only
Sample(s) Size: (Accepted) Rejected
Non-Conformance Memo: Yes (No)
Package Condition: (Good) Damaged Severe Damage

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	5-day
10 Day:	

Page 4 of 14

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
1	M5.1 A	2'X4' DEEP Fissure, Pin Hole, Light	Room 14
2	B	Texture Paint	14
3	C		107
4	T9.1 A	Gray Duct Sealant	Rm 016
5	B		
6	C		
7	F1.2 A	Beige Vinyl Sheet Flooring	Room 11
8	B		
9	C		
10	F2.3 A	12"X12" white w/ Gray specs Floor	Room 10
11	B	Tile	
12	C		
13	M19.1 A	Fiberglass Reinforced Plastic	Room 002
14	B		
15	C		
16	F3.1 A	9"x9" Brown w/ black streaks	Room 009
17	B	Floor Tile	
18	C		
19	M12.3 A	4" Black Cove Base w/ Brown	Room 009
20	B	Mastic	
21	C		

Special Instructions: Analyze Group Method - Stop at First Positive ✓ Yes No

Number of samples shipped this page: 21
Total number of samples shipped: 274

Relinquished By:		Date: 1/4/16	Time: 12:00	Firm:	NIH
Received By:		Date: 1/5/16	Time: 11:50	Firm:	NIH Bridge
Analyzed By:		Date: 1-9-16	Time: 11:12	Firm:	NIH

Revised 01/20/15 RIM

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 670-5582
Email: koliver@bridgeband.com
Inspector/Contact: Kevin Oliver

NIH Lab Batch ID:	16-00997
Project Name:	Old Livingston Hospital
Project Number:	999-3019
Date Samples Taken:	12/30/15
Type of Analysis:	PLM

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	5 day
10 Day:	

For Lab Use Only
Sample(s) Size: (Accepted) Rejected
Non-Conformance Memo: Yes (No)
Package Condition: (Good) Damaged Severe Damage

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
22	F3.2 A	9"x9" Light Brn. w/ brown streaks	Room 006
23	B	〃 From tile/mastic	〃
24	C	〃	〃
25	F2.4 A	12"x12" white w/ gray marble Pattern	Room 002
26	B	〃 Floor Tile	〃 002
27	C	〃	Room 029
28	MS.7 A	2'x4' Gypsum board Panel	Rm 002
29	B	〃	〃
30	C	〃	〃
	~~T9.2A~~	White DUCT SEALANT	
	B	〃 ~~tape~~	
	C	〃	
31	TB.1 A	Vibration Joint color Black	Rm 029
32	B	〃	〃
33	C	〃	〃
34	F3.3 A	9"x9" Green Floor tile/mastic	Rm 029
35	B	〃	〃
36	C	〃	〃
37	F3.4 A	9"x9" tan Floor tile	〃
38	B	〃	〃
39	C	〃	〃

Special Instructions: Analyze Group Method - Stop at First Positive ✓ Yes No

Number of samples shipped this page: 18
Total number of samples shipped: 274

Relinquished By: Robert McConnell Date: 1/4/16 Time: 17:00 Firm: NIH
Received By: [illegible] Date: 1/5/16 Time: 11:50 Firm: NIH BULK
Analyzed By: Jade C. Date: 1.8.16 Time: 11:3 Firm: NIH

Revised 01/20/15 RIM

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EMAIL: Rmelgoza@bridgeband.com
NVLAP Lab Code: 200511-0

1/11/2016

Kevin Oliver
Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-

RE: Bulk Asbestos Fiber Analysis; Batch # 16-00008
Project Location *Old Livingston Hospital-Boiler Room*

Dear Kevin Oliver,

Thank you for choosing Northern Industrial Hygiene, Inc. as your laboratory. Enclosed you will find analytical results for the bulk samples submitted to the laboratory.

Northern Industrial Hygiene is accredited by NVLAP Lab Code: 200511-0. Accreditation by NVLAP does not indicate endorsement by NVLAP or any other government agency. All bulk samples are analyzed in accordance with U.S. EPA Method -600/M4-82-020, December 1982 and EPA Method 600/R-93-116, July 1993. "Method for Determination of Asbestos in Bulk Building Materials"(NESHAP, 40 CFR-Part 61) protocol.

Analysis is cross checked through our inter or intra laboratory quality assurance program for verification. The percent values reported are based on calibrated visual estimates by volume unless verification by Point Count is indicated. Test results reported relate only to the samples submitted by the customer to Northern Industrial Hygiene, Inc. Trace amounts of asbestos are below the limit of detection and asbestos fibers with diameters below approximately 0.25 micrometers are not detectable with the Polarized Light Microscopy (PLM) analytical procedure. A trace amount of asbestos is defined as one to five fibers in three slide mounts. Asbestos found in this amount will be reported as "< 1.0%" by PLM analysis.

This report is highly confidential and shall not be reproduced without your written approval and the written approval of Northern Industrial Hygiene, Inc.

Samples are archived for thirty (30) days following analysis. Please contact us if samples need to be archived longer than the standard holding time.

Thank you for using Northern Industrial Hygiene, Inc. If you have any questions or concerns please contact us.

Sincerely,

Reviewed by: Jude Cummings

Enclosure: Bulk Sample Results

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

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OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Boiler Room*

NIH Batch Number: **16-00008**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **36**

Client Sample Number: **T1.1A** Lab Sample Number: **16-00008.0001**
Client Sample Description: **Boiler Ribbon Gasket**
Client Sample Location: **Large Boiler**
Sample Comments: Checked If Sample Not Analyzed ☐

Tan fibrous brittle material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	35% Fiberglass	65% Filler and Binder

Client Sample Number: **T1.1B** Lab Sample Number: **16-00008.0002**
Client Sample Description: **Boiler Ribbon Gasket**
Client Sample Location: **Large Boiler**
Sample Comments: Checked If Sample Not Analyzed ☐

Tan fibrous brittle material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	40% Fiberglass	60% Filler and Binder

Client Sample Number: **T1.1C** Lab Sample Number: **16-00008.0003**
Client Sample Description: **Boiler Ribbon Gasket**
Client Sample Location: **Large Boiler**
Sample Comments: Checked If Sample Not Analyzed ☐

Tan fibrous brittle material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	40% Fiberglass	60% Filler and Binder

Client Sample Number: **T1.2A** Lab Sample Number: **16-00008.0004**
Client Sample Description: **Boiler Ribbon Gasket - White**
Client Sample Location: **Small Boiler**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

Tan fibrous compressed material with blue paint

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	80% Cellulose	2% Paint
	1% Synthetic	17% Filler and Binder

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/11/2016**

Jude Cummings

Reviewed 1/11/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Boiler Room*

NIH Batch Number: **16-00008**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **36**

Client Sample Number:	**T1.2B**	Lab Sample Number: **16-00008.0005**
Client Sample Description:	**Boiler Ribbon Gasket - White**	
Client Sample Location:	**Small Boiler**	
Sample Comments:	**Materials distinguishable but inseparable**	Checked If Sample Not Analyzed ☐

Tan fibrous compressed material with blue paint

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	85% Cellulose	2% Paint
	1% Synthetic	12% Filler and Binder

Client Sample Number:	**T1.2C**	Lab Sample Number: **16-00008.0006**
Client Sample Description:	**Boiler Ribbon Gasket - White**	
Client Sample Location:	**Small Boiler**	
Sample Comments:	**Materials distinguishable but inseparable**	Checked If Sample Not Analyzed ☐

Tan fibrous compressed material with blue paint

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	85% Cellulose	3% Paint
	1% Synthetic	11% Filler and Binder

Client Sample Number:	**T1.3A**	Lab Sample Number: **16-00008.0007**
Client Sample Description:	**Boiler Flange Gasket - Red**	
Client Sample Location:	**Small Boiler**	
Sample Comments:		Checked If Sample Not Analyzed ☐

Red non-fibrous flexible material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Client Sample Number:	**T1.3B**	Lab Sample Number: **16-00008.0008**
Client Sample Description:	**Boiler Flange Gasket - Red**	
Client Sample Location:	**Small Boiler**	
Sample Comments:		Checked If Sample Not Analyzed ☐

Red non-fibrous flexible material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/11/2016**

Jude Cummings

Reviewed 1/11/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Boiler Room*

NIH Batch Number: **16-00008**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **36**

Client Sample Number: **T1.3C** Lab Sample Number: **16-00008.0009**
Client Sample Description: **Boiler Flange Gasket - Red**
Client Sample Location: **Small Boiler**
Sample Comments: Checked If Sample Not Analyzed ☐

Red non-fibrous flexible material with dirt residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		3% Miscellaneous Materials
		97% Filler and Binder

Client Sample Number: **T1.4A** Lab Sample Number: **16-00008.0010**
Client Sample Description: **Pipe Flange Gasket - White**
Client Sample Location: **Small Boiler**
Sample Comments: Checked If Sample Not Analyzed ☐

Tan fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	92% Cellulose	8% Filler and Binder

Client Sample Number: **T1.4B** Lab Sample Number: **16-00008.0011**
Client Sample Description: **Pipe Flange Gasket - White**
Client Sample Location: **Small Boiler**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

Tan fibrous compressed material with silver residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	90% Cellulose	2% Coating
		8% Filler and Binder

Client Sample Number: **T1.4C** Lab Sample Number: **16-00008.0012**
Client Sample Description: **Pipe Flange Gasket - White**
Client Sample Location: **Small Boiler**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

Tan fibrous compressed material with silver residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	92% Cellulose	1% Coating
		7% Filler and Binder

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/11/2016**

Jude Cummings

Reviewed 1/11/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Boiler Room*

NIH Batch Number: **16-00008**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **36**

Client Sample Number: **T7.1A** Lab Sample Number: **16-00008.0013**
Client Sample Description: **Boiler Breaching**
Client Sample Location: **On Breaching**
Sample Comments: Checked If Sample Not Analyzed ☐

White fibrous powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	15% Cellulose	70% Filler and Binder
	15% Mineral Wool and Beads	

Client Sample Number: **T7.1B** Lab Sample Number: **16-00008.0014**
Client Sample Description: **Boiler Breaching**
Client Sample Location: **On Breaching**
Sample Comments: Checked If Sample Not Analyzed ☐

White fibrous powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	18% Cellulose	67% Filler and Binder
	15% Mineral Wool and Beads	

Client Sample Number: **T7.1C** Lab Sample Number: **16-00008.0015**
Client Sample Description: **Boiler Breaching**
Client Sample Location: **On Breaching**
Sample Comments: Checked If Sample Not Analyzed ☐

White fibrous powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	18% Cellulose	62% Filler and Binder
	20% Mineral Wool and Beads	

Client Sample Number: **T2.2A** Lab Sample Number: **16-00008.0016**
Client Sample Description: **Mudded Pipe Fittings**
Client Sample Location: **Fiberglass Lines**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/11/2016**

Jude Cummings

Reviewed 1/11/2016 by: Jude Cummings

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Boiler Room*

NIH Batch Number: **16-00008**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **36**

White material with woven fibers

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	20% Cellulose	65% Filler and Binder
	15% Mineral Wool and Beads	

Client Sample Number: **T2.2B** Lab Sample Number: **16-00008.0017**
Client Sample Description: **Mudded Pipe Fittings**
Client Sample Location: **Fiberglass Lines**
Sample Comments: Checked If Sample Not Analyzed ☐

White material with woven fibers

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	22% Cellulose	78% Filler and Binder

Client Sample Number: **T2.2C** Lab Sample Number: **16-00008.0018**
Client Sample Description: **Mudded Pipe Fittings**
Client Sample Location: **Fiberglass Lines**
Sample Comments: Checked If Sample Not Analyzed ☐

White material with woven fibers

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	22% Cellulose	78% Filler and Binder

Client Sample Number: **M16.1A** Lab Sample Number: **16-00008.0019**
Client Sample Description: **Concrete**
Client Sample Location: **Boiler Room**
Sample Comments: Checked If Sample Not Analyzed ☐

Gray gritty material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		65% Aggregate
		35% Filler and Binder

Client Sample Number: **M16.1B** Lab Sample Number: **16-00008.0020**
Client Sample Description: **Concrete**
Client Sample Location: **Boiler Room**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/11/2016**

Jude Cummings
Reviewed 1/11/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Boiler Room*

NIH Batch Number: **16-00008**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **36**

Gray paint on gray gritty compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		2% Paint
		70% Aggregate
		28% Filler and Binder

Client Sample Number: **M16.1C** Lab Sample Number: **16-00008.0021**
Client Sample Description: **Concrete**
Client Sample Location: **Boiler Room**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

Yellow and gray paint on gray gritty compresssed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		2% Paint
		70% Aggregate
		28% Filler and Binder

Client Sample Number: **M17.1A** Lab Sample Number: **16-00008.0022**
Client Sample Description: **Brick/Mortar**
Client Sample Location: **Exterior Incinerator**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Red gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Fine Grains
		10% Aggregate
		60% Filler and Binder

Layer 2 **Gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		70% Aggregate
		30% Filler and Binder

Client Sample Number: **M17.1B** Lab Sample Number: **16-00008.0023**
Client Sample Description: **Brick/Mortar**
Client Sample Location: **Exterior Incinerator**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/11/2016**

Jude Cummings
Reviewed 1/11/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Boiler Room*

NIH Batch Number: **16-00008**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **36**

Layer 1 **Red gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		20% Fine Grains 10% Aggregate 70% Filler and Binder

Layer 2 **Gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		75% Aggregate 25% Filler and Binder

Client Sample Number: **M17.1C** Lab Sample Number: **16-00008.0024**
Client Sample Description: **Brick/Mortar**
Client Sample Location: **Exterior Incinerator**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Red gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		20% Fine Grains 10% Aggregate 70% Filler and Binder

Layer 2 **Gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		70% Aggregate 30% Filler and Binder

Client Sample Number: **M17.2A** Lab Sample Number: **16-00008.0025**
Client Sample Description: **Fire Brick/Mortar**
Client Sample Location: **Interior Incinerator**
Sample Comments: Checked If Sample Not Analyzed ☐

Tan, orange and gray gritty material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		70% Aggregate 30% Filler and Binder

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/11/2016**

Jude Cummings

Reviewed 1/11/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Boiler Room*

NIH Batch Number: **16-00008**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **36**

Client Sample Number: **M17.2B** Lab Sample Number: **16-00008.0026**
Client Sample Description: **Fire Brick/Mortar**
Client Sample Location: **Interior Incinerator**
Sample Comments: Checked If Sample Not Analyzed ☐

Tan, orange and gray gritty material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		75% Aggregate 25% Filler and Binder

Client Sample Number: **M17.2C** Lab Sample Number: **16-00008.0027**
Client Sample Description: **Fire Brick/Mortar**
Client Sample Location: **Interior Incinerator**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

Tan and orange gritty material with black soot

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		70% Aggregate 25% Filler and Binder 5% Miscellaneous Particles

Client Sample Number: **M18.1A** Lab Sample Number: **16-00008.0028**
Client Sample Description: **Concrete Block/Mortar**
Client Sample Location: **Boiler Room**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		75% Aggregate 25% Filler and Binder

Layer 2 **Gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		60% Aggregate 10% Glass Fragments 30% Filler and Binder

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/11/2016**

Jude Cummings

Reviewed 1/11/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Boiler Room*

NIH Batch Number: **16-00008**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **36**

Client Sample Number: **M18.1B** Lab Sample Number: **16-00008.0029**
Client Sample Description: **Concrete Block/Mortar**
Client Sample Location: **Boiler Room**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		70% Aggregate
		30% Filler and Binder

Layer 2 **Gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		65% Aggregate
		10% Glass Fragments
		25% Filler and Binder

Client Sample Number: **M18.1C** Lab Sample Number: **16-00008.0030**
Client Sample Description: **Concrete Block/Mortar**
Client Sample Location: **Boiler Room**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		75% Aggregate
		25% Filler and Binder

Layer 2 **Gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		65% Aggregate
		10% Glass Fragments
		25% Filler and Binder

Client Sample Number: **T1.5A** Lab Sample Number: **16-00008.0031**
Client Sample Description: **Flange Gasket - Red**
Client Sample Location: **Main Water Line**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/11/2016**

Jude Cummings

Reviewed 1/11/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Boiler Room*

NIH Batch Number: **16-00008**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **36**

Red flexible non-fibrous material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Client Sample Number: **T1.5B** Lab Sample Number: **16-00008.0032**
Client Sample Description: **Flange Gasket - Red**
Client Sample Location: **Main Water Line**
Sample Comments: Checked If Sample Not Analyzed ☐

Red flexible non-fibrous material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Client Sample Number: **T1.5C** Lab Sample Number: **16-00008.0033**
Client Sample Description: **Flange Gasket - Red**
Client Sample Location: **Main Water Line**
Sample Comments: Checked If Sample Not Analyzed ☐

Red flexible non-fibrous material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Client Sample Number: **T2.1A** Lab Sample Number: **16-00008.0034**
Client Sample Description: **Mudded Fittings - Original**
Client Sample Location: **Boiler Room**
Sample Comments: Checked If Sample Not Analyzed ☐

White fibrous powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
12% Chrysotile Asbestos 8% Amosite Asbestos		80% Filler and Binder

Client Sample Number: **T2.1B** Lab Sample Number: **16-00008.0035**
Client Sample Description: **Mudded Fittings Original**
Client Sample Location: **Boiler Room**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/11/2016**

Jude Cummings

Reviewed 1/11/2016 by: Jude Cummings

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Billings, MT • Helena, MT • Seattle, WA

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Boiler Room*

NIH Batch Number: **16-00008**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **36**

Client Sample Number:	**T2.1C**	Lab Sample Number: **16-00008.0036**
Client Sample Description:	**Mudded Fittings Original**	
Client Sample Location:	**Room 200**	
Sample Comments:	**Not Analyzed Per Client Request**	Checked If Sample Not Analyzed ☑

Client Sample Number:	**T3.3A**	Lab Sample Number: **16-00008.0037**
Client Sample Description:	**MAG. Insulation**	
Client Sample Location:	**Boiler Room, Straight Run Pipe**	
Sample Comments:		Checked If Sample Not Analyzed ☐

White fibrous powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
12% Chrysotile Asbestos	5% Cellulose	75% Filler and Binder
8% Amosite Asbestos		

Client Sample Number:	**T3.3B**	Lab Sample Number: **16-00008.0038**
Client Sample Description:	**MAG. Straight Run Pipe Insulation**	
Client Sample Location:	**Boiler Room**	
Sample Comments:	**Not Analyzed Per Client Request**	Checked If Sample Not Analyzed ☑

Client Sample Number:	**T3.3C**	Lab Sample Number: **16-00008.0039**
Client Sample Description:	**MAG. Straight Run Pipe Insulation**	
Client Sample Location:	**Boiler Room**	
Sample Comments:	**Not Analyzed Per Client Request**	Checked If Sample Not Analyzed ☑

Client Sample Number:	**T3.5A**	Lab Sample Number: **16-00008.0040**
Client Sample Description:	**Duplex Insulation**	
Client Sample Location:	**Boiler Room**	
Sample Comments:		Checked If Sample Not Analyzed ☐

Gray, black and white fibrous corrugated material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
5% Chrysotile Asbestos	80% Cellulose	12% Filler and Binder
		3% Asphalt Filler and Binder

Client Sample Number:	**T3.5B**	Lab Sample Number: **16-00008.0041**
Client Sample Description:	**Duplex Insulation**	
Client Sample Location:	**Boiler Room**	
Sample Comments:	**Not Analyzed Per Client Request**	Checked If Sample Not Analyzed ☑

(Sample results continued on next page.)

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/11/2016**

Jude Cummings

Reviewed 1/11/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital-Boiler Room*

NIH Batch Number: **16-00008**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **36**

Client Sample Number:	**T3.5C**	Lab Sample Number: **16-00008.0042**
Client Sample Description:	**Duplex Insulation**	
Client Sample Location:	**Boiler Room**	
Sample Comments:	**Not Analyzed Per Client Request**	Checked If Sample Not Analyzed ☑

Sampled by: Kevin Oliver **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/11/2016**

Jude Cummings

Reviewed 1/11/2016 by: Jude Cummings

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 670-5582
Email: koliver@bridgeband.com
Inspector/Contact: Kevin Oliver

NIH Lab Batch ID:	16-000005
Project Name:	Old Livingston Hospital
Project Number:	999-3819
Date Samples Taken:	12-30-15
Type of Analysis:	PLM

For Lab Use Only
Sample(s) Size: Accepted / Rejected
Non-Conformance Memo: Yes / No
Package Condition: Good / Damaged / Severe Damage

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	X
10 Day:	

BOILER ROOM

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
1	T1.1 A	BOILER RIBBON GASKET	LARGE BOILER
2	1 B	〃	〃
3	1 C	〃	〃
4	T1.2 A	BOILER RIBBON GASKET (White)	SMALL BOILER
5	1 B	〃	〃
6	1 C	〃	〃
7	T1.3 A	BOILER FLANGE GASKET (Red)	SMALL BOILER
8	1 B	〃	〃
9	1 C	〃	〃
10	T1.4 A	PIPE FLANGE GASKET (white)	SMALL BOILER
11	1 B	〃	〃
12	1 C	〃	〃
13	T2.1 A	BOILER BREACHING	3rd BREACHING
14	1 B	〃	〃
15	1 C	〃	〃
16	T2.2 A	MUDDED PIPE FITTINGS	FIBERGLASS LINES
17	1 B	〃	〃
18	1 C	〃	〃
19	M6.1 A	CONCRETE	BOILER ROOM
20	1 B	〃	〃
21	1 C	〃	〃

Special Instructions: Analyze Group Method - Stop at First Positive X Yes No

Number of samples shipped this page: 21
Total number of samples shipped: 274

Relinquished By:	ROBERT BRANNELL	Date: 1/4/16	Time: 17:00	Firm: NIH
Received By:		Date: 1/5/16	Time: 11:50	Firm: NIH
Analyzed By:		Date: 1-11-16	Time: 9:45	Firm: LAB

Revised 01/20/15 RIM

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 670-5582
Email: koliver@bridgeband.com
Inspector/Contact: Kevin Oliver

NIH Lab Batch ID:	16-00008
Project Name:	Old Livingston Hospital
Project Number:	999-3079
Date Samples Taken:	12/30/15
Type of Analysis:	PLM

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	5 day
10 Day:	

For Lab Use Only
Sample(s) Size: ___Accepted ___Rejected
Non-Conformance Memo: ___Yes ___No
Package Condition: ___Good ___Damaged ___Severe Damage

BOILER ROOM

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
22	M17.1A	BRICK/Mortar	Incinerator
23	1 B	1	Exterior
24	1 C	1	1
25	M17.2A	FireBrick/Mortar	Incinerator
26	1 B	1 1	Interior
27	1 C	1 1	1
28	M18.1A	Concrete Block/Mortar	Boiler Room
29	1 B	1 1	1
30	1 C	1 1	1
31	T1.5A	Flange Gasket (Red)	Manufacture Line
32	1 B	1 1	1
33	1 C	1 1	1
34	T2.1A	MUDDED Fitting ORIG	Boiler Room
35	1 B	1 1	"
36	1 C	1 1	Rm 200
37	T3.3A	MAG. St. Run.	Boiler Room
38	1 B	Pipe Insulation	1
39	1 C		
40	T3.5A	Duplex Insulation	Boiler Room
41	1 B	1 1	1
42	1 C	1 1	

Special Instructions: Analyze Group Method - Stop at First Positive X Yes No

Number of samples shipped this page: 21
Total number of samples shipped: 274

Relinquished By:	Date: 1/4/16	Time: 17:00	Firm: NIH	
Received By:	Date: 1/5/16	Time: 11:50	Firm: NIH BVD	
Analyzed By:	Date: 1-11-16	Time: 9:18	Firm:	

Revised 01/20/15 RIM

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
EMAIL: Rmelgoza@bridgeband.com
NVLAP Lab Code: 200511-0

1/6/2016

Bob Brownell
Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-

RE: Bulk Asbestos Fiber Analysis; Batch # 16-00009
Project Location *Old Livingston Hospital*

Dear Bob Brownell,

Thank you for choosing Northern Industrial Hygiene, Inc. as your laboratory. Enclosed you will find analytical results for the bulk samples submitted to the laboratory.

Northern Industrial Hygiene is accredited by NVLAP Lab Code: 200511-0. Accreditation by NVLAP does not indicate endorsement by NVLAP or any other govemment agency. All bulk samples are analyzed in accordance with U.S. EPA Method -600/M4-82-020, December 1982 and EPA Method 600/R-93-116, July 1993. "Method for Determination of Asbestos in Bulk Building Materials"(NESHAP, 40 CFR-Part 61) protocol.

Analysis is cross checked through our inter or intra laboratory quality assurance program for verification. The percent values reported are based on calibrated visual estimates by volume unless verification by Point Count is indicated. Test results reported relate only to the samples submitted by the customer to Northern Industrial Hygiene, Inc. Trace amounts of asbestos are below the limit of detection and asbestos fibers with diameters below approximately 0.25 micrometers are not detectable with the Polarized Light Microscopy (PLM) analytical procedure. A trace amount of asbestos is defined as one to five fibers in three slide mounts. Asbestos found in this amount will be reported as "< 1.0%" by PLM analysis.

This report is highly confidential and shall not be reproduced without your written approval and the written approval of Northern Industrial Hygiene, Inc.

Samples are archived for thirty (30) days following analysis. Please contact us if samples need to be archived longer than the standard holding time.

Thank you for using Northern Industrial Hygiene, Inc. If you have any questions or concerns please contact us.

Sincerely,

Jude Cummings

Reviewed by: Jude Cummings

Enclosure: Bulk Sample Results

NORTHERN INDUSTRIAL HYGIENE, INC.
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OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00009**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Client Sample Number: **M6.4A** Lab Sample Number: **16-00009.0001**
Client Sample Description: **1'x1' Ceiling Tile/White W/Heavy Fissures & Black Mastic**
Client Sample Location: **Room 194**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White paint on off-white fibrous compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	30% Cellulose	3% Paint
	15% Mineral Wool and Beads	52% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Layer 2 **Dark brown brittle material with white residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Mineral Fibers	97% Filler and Binder
	1% Cellulose	
	1% Wollastonite	

Client Sample Number: **M6.4B** Lab Sample Number: **16-00009.0002**
Client Sample Description: **1'x1' Ceiling Tile/White W/Heavy Fissures & Black Mastic**
Client Sample Location: **Room 194**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White paint on off-white fibrous compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	30% Cellulose	10% Paint
	20% Mineral Wool and Beads	40% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Layer 2 **Dark brown brittle mastic with white residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Mineral Fibers	96% Filler and Binder
	2% Cellulose	
	1% Wollastonite	

Comments: **Materials distinguishable but inseparable**

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/6/2016**

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00009**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Client Sample Number: **M6.4C** Lab Sample Number: **16-00009.0003**
Client Sample Description: **1'x1' Ceiling Tile/White W/Heavy Fissures & Black Mastic**
Client Sample Location: **Room 194**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White paint on off-white fibrous compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	30% Cellulose	2% Paint
	20% Mineral Wool and Beads	48% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Layer 2 **Dark brown brittle mastic with white residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	97% Filler and Binder
	1% Wollastonite	
	1% Mineral Fibers	

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M6.3A** Lab Sample Number: **16-00009.0004**
Client Sample Description: **1'x1' Ceiling Tile W/Patterned Holes & Mastic/Brown**
Client Sample Location: **Room 106**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White paint on medium brown compressed fibers**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	90% Cellulose	7% Paint
		3% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Layer 2 **Medium brown mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Client Sample Number: **M6.3B** Lab Sample Number: **16-00009.0005**
Client Sample Description: **1'x1' Ceiling Tile W/Patterned Holes & Mastic/Brown**
Client Sample Location: **Room 106**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/6/2016**

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00009**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Layer 1 **White paint on medium brown compressed fibers**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	90% Cellulose	4% Paint
		6% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Layer 2 **Medium brown mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Layer 3 **White compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Client Sample Number: **M6.3C** Lab Sample Number: **16-00009.0006**
Client Sample Description: **1'x1' Ceiling Tile W/Patterned Holes & Mastic/Brown**
Client Sample Location: **Room 106**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White paint on medium brown compressed fibers**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	92% Cellulose	5% Paint
		3% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Layer 2 **Medium brown mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Cellulose	97% Filler and Binder

Client Sample Number: **F2.8A** Lab Sample Number: **16-00009.0007**
Client Sample Description: **12"x12" Floor Tile/Ivory W/Tan Marbling & Mastic**
Client Sample Location: **Room 138**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/6/2016**

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00009**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Layer 1 **Off-white vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 **Tan sticky material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose 2% Synthetic	96% Filler and Binder

Client Sample Number: **F2.8B** Lab Sample Number: **16-00009.0008**
Client Sample Description: **12"x12" Floor Tile/Ivory W/Tan Marbling & Mastic**
Client Sample Location: **Room 133 - Northwest Corner**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Off-white streaked vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 **Tan and brown soft sticky material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	10% Miscellaneous Materials 88% Filler and Binder

Client Sample Number: **F2.8C** Lab Sample Number: **16-00009.0009**
Client Sample Description: **12"x12" Floor Tile/Ivory W/Tan Marbling & Mastic**
Client Sample Location: **Room 133 - Southeast Corner**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/6/2016**

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00009**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Layer 1 **Off-white vinyl**

Asbestos Fibrous Components:-	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Tan and black mastics**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
5% Chrysotile Asbestos	1% Cellulose	70% Asphalt Filler and Binder
	1% Synthetic	23% Filler and Binder

Client Sample Number: **F9.1A** Lab Sample Number: **16-00009.0010**
Client Sample Description: **4"x2' Floor Tile/Brown & Mastic**
Client Sample Location: **Room 183- Doorway**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Tan streaked vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Tan and black mastics**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
4% Crocidolite Asbestos	2% Cellulose	85% Asphalt Filler and Binder
		9% Filler and Binder

Client Sample Number: **F9.1B** Lab Sample Number: **16-00009.0011**
Client Sample Description: **4"x2' Floor Tile/Brown & Mastic**
Client Sample Location: **Room 103 - Southeast Corner**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/6/2016**

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00009**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Layer 1 **Tan streaked vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 **Opaque sticky material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Filler and Binder

Layer 3 **Black asphalt**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
Not Analyzed Per Client		

Client Sample Number: **F9.1C** Lab Sample Number: **16-00009.0012**
Client Sample Description: **4"x2' Floor Tile/Brown & Mastic**
Client Sample Location: **Room 183 - Southwest Corner**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Tan streaked vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Asphalt Filler and Binder 70% Vinyl Filler and Binder

Layer 2 **Black asphalt**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
Not Analyzed Per Client		

Client Sample Number: **F2.9A** Lab Sample Number: **16-00009.0013**
Client Sample Description: **12"x12" Floor Tile/White W/Gray Marbled & Mastic**
Client Sample Location: **Room 104 - Southeast Corner**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/6/2016**

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00009**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Layer 1 **White vinyl with gray streaks**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		35% Aggregate
		65% Vinyl Filler and Binder

Layer 2 **Dark brown and tan mastics**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	98% Filler and Binder
	1% Mineral Fibers	

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F2.9B** Lab Sample Number: **16-00009.0014**
Client Sample Description: **12"x12" Floor Tile/White W/Gray Marbled & Mastic**
Client Sample Location: **Room 104 - Northeast Corner**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White vinyl with gray streaks**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		35% Aggregate
		65% Vinyl Filler and Binder

Layer 2 **Tan sticky material with gray gritty residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	22% Fine Grains
		77% Filler and Binder

Client Sample Number: **F2.9C** Lab Sample Number: **16-00009.0015**
Client Sample Description: **12"x12" Floor Tile/White W/Gray Marbled & Mastic**
Client Sample Location: **Room 134 - Doorway**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/6/2016**

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00009**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Layer 1 **White vinyl with gray streaks**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		35% Aggregate
		65% Vinyl Filler and Binder

Layer 2 **Brown and stan sticky material with gray residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	30% Fine Grains
	2% Synthetic	66% Filler and Binder

Client Sample Number: **F1.3A** Lab Sample Number: **16-00009.0016**
Client Sample Description: **Vinyl Sheet Flooring/Beige & Brown & Mastic**
Client Sample Location: **Room 104A**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

Brown streaked vinyl on off-white fibrous backing with tan residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	10% Cellulose	35% Filler and Binder
	3% Fiberglass	52% Vinyl Filler and Binder

Client Sample Number: **F1.3B** Lab Sample Number: **16-00009.0017**
Client Sample Description: **Vinyl Sheet Flooring/Beige & Brown & Mastic**
Client Sample Location: **Room 104A**
Sample Comments: Checked If Sample Not Analyzed ☐

Brown streaked vinyl on off-white fibrous backing with tan residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	10% Cellulose	35% Filler and Binder
	3% Fiberglass	52% Vinyl Filler and Binder

Comments: **Materials distinguishable but inseparable**

Layer 2 **Dark brown and tan mastics**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	5% Cellulose	94% Filler and Binder
	1% Fiberglass	

Comments: **Materials distinguishable but inseparable**

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/6/2016**

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00009**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Client Sample Number: **F1.3C** Lab Sample Number: **16-00009.0018**
Client Sample Description: **Vinyl Sheet Flooring/Beige & Brown & Mastic**
Client Sample Location: **Room 104A**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

Brown streaked vinyl on white fibrous backing with tan residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	12% Cellulose	40% Filler and Binder
	3% Fiberglass	45% Vinyl Filler and Binder

Client Sample Number: **M12.4A** Lab Sample Number: **16-00009.0019**
Client Sample Description: **4" Vinyl Cove Base/Brown & Mastic/Light Brown**
Client Sample Location: **Room 104A**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 Brown vinyl

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Vinyl Filler and Binder

Layer 2 Tan flexible material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Client Sample Number: **M12.4B** Lab Sample Number: **16-00009.0020**
Client Sample Description: **4" Vinyl Cove Base/Brown & Mastic/Light Brown**
Client Sample Location: **Room 203**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 Brown vinyl

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 Tan mastic

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	93% Filler and Binder
	5% Synthetic	

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/6/2016**

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

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OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00009**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **21**

Client Sample Number: **M12.4C** Lab Sample Number: **16-00009.0021**
Client Sample Description: **4" Vinyl Cove Base/Brown & Mastic/Light Brown**
Client Sample Location: **Room 179**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 Brown vinyl

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 Tan mastic

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Sampled by: Bob Brownell 12/30/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Jude Cummings 1/6/2016

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 647-5275
Email: bbrownell@bridgeband.com
Inspector/Contact: Bob Brownell

NIH Lab Batch ID:	[illegible]
Project Name:	Old Livingston Hospital
Project Number:	999-3019
Date Samples Taken:	12/30/15
Type of Analysis:	PLM

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	5 day
10 Day:	

For Lab Use Only
Sample(s) Size: (Accepted) Rejected
Non-Conformance Memo: Yes (No)
Package Condition: (Good) Damaged Severe Damage

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
1	M6.4A	1'x1' Ceiling Tile (White w/	Rm 194
2	M6.4B	Heavy Fissures + Mastic (Black)	Rm 194
3	M6.4C	"	Rm 194
4	M6.3A	1'x1' Ceiling Tile w/ Pinholes	Rm 106
5	M6.3B	Holes + Mastic (Brown)	Rm 106
6	M6.3C	"	Rm 106
7	F2.8A	12"x12" Floor Tile (Beige w/ Tan Marbling)	Rm 138
8	F2.8B	+ Mastic "	Rm 133 @ NW Corner
9	F2.8C	"	Rm 133 - SE Corner
10	F9.1A	4"x2' Floor Tile (Brown) + Mastic	Rm 183 - Doorway
11	F9.1B	"	Rm 103 - SE Corner
12	F9.1C	"	Rm 183 - SW Corner
13	F2.9A	12"x12" Floor Tile (White w/ Gray	Rm 104 - SE Corner
14	F2.9B	Marbled) + Mastic "	Rm 104 - NE Corner
15	F2.9C	"	Rm 134 - Doorway
16	F1.3A	Vinyl Sheet Flooring (Beige + Brown)	Rm 104A
17	F1.3B	+ Mastic "	Rm 104A
18	F1.3C	"	Rm 104A
19	M12.4A	4" Vinyl Cove (Brown) + Mastic	Rm 104A
20	M12.4B	(Light Brown)	Rm 203
21	M12.4C		Rm 179

Special Instructions: Analyze Group Method - Stop at First Positive X Yes No
Number of samples shipped this page: 21
Total number of samples shipped: 274

Relinquished By:	Robert Brownell	Date: 1/4/16	Time: 17:00	Firm: NIH
Received By:	[signature]	Date: 1/5/16	Time: 11:50	Firm: NIH BVL
Analyzed By:	[signature]	Date: 1.6.16	Time: 09:38	Firm: LAB

Revised 01/20/15 RIM

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INDUSTRIAL HYGIENE, INC.
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215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
EMAIL: Rmelgoza@bridgeband.com
NVLAP Lab Code: 200511-0

1/6/2016

Bob Brownell
Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-

RE: Bulk Asbestos Fiber Analysis; Batch # 16-00010
Project Location *Old Livingston Hospital - First Floor*

Dear Bob Brownell,

Thank you for choosing Northern Industrial Hygiene, Inc. as your laboratory. Enclosed you will find analytical results for the bulk samples submitted to the laboratory.

Northern Industrial Hygiene is accredited by NVLAP Lab Code: 200511-0. Accreditation by NVLAP does not indicate endorsement by NVLAP or any other government agency. All bulk samples are analyzed in accordance with U.S. EPA Method -600/M4-82-020, December 1982 and EPA Method 600/R-93-116, July 1993. "Method for Determination of Asbestos in Bulk Building Materials"(NESHAP, 40 CFR-Part 61) protocol.

Analysis is cross checked through our inter or intra laboratory quality assurance program for verification. The percent values reported are based on calibrated visual estimates by volume unless verification by Point Count is indicated. Test results reported relate only to the samples submitted by the customer to Northern Industrial Hygiene, Inc. Trace amounts of asbestos are below the limit of detection and asbestos fibers with diameters below approximately 0.25 micrometers are not detectable with the Polarized Light Microscopy (PLM) analytical procedure. A trace amount of asbestos is defined as one to five fibers in three slide mounts. Asbestos found in this amount will be reported as "< 1.0%" by PLM analysis.

This report is highly confidential and shall not be reproduced without your written approval and the written approval of Northern Industrial Hygiene, Inc.

Samples are archived for thirty (30) days following analysis. Please contact us if samples need to be archived longer than the standard holding time.

Thank you for using Northern Industrial Hygiene, Inc. If you have any questions or concerns please contact us.

Sincerely,

Rachel Melgoza

Reviewed by: Rachel Melgoza

Enclosure: Bulk Sample Results

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

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OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital - First Floor*

NIH Batch Number: **16-00010**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **18**

Client Sample Number: **F2.5A** Lab Sample Number: **16-00010.0001**
Client Sample Description: **12"X12" Floor Tile - White w/Beige Specks, Yellow Mastic & Brown Leveling**
Client Sample Location: **Room 101 - North End of Room**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 White with beige streaks vinyl		
Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 Yellow adhesive		
Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Filler and Binder

Layer 3 Brown grainy compressed material		
Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose 1% Synthetic	68% Filler and Binder 30% Fine Grains

Client Sample Number: **F2.5B** Lab Sample Number: **16-00010.0002**
Client Sample Description: **12"X12" Floor Tile - White w/Beige Specks, Yellow Mastic & Brown Leveling**
Client Sample Location: **Room 101 - Sitting Area**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 White with beige streaks vinyl		
Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 Yellow adhesive		
Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Filler and Binder

Layer 3 Brown grainy compressed material		
Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose 1% Synthetic	68% Filler and Binder 30% Fine Grains

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Rachel Melgoza **1/6/2016**

Rachel Melgoza
Reviewed 1/6/2016 by: Rachel Melgoza

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital - First Floor*

NIH Batch Number: **16-00010**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **18**

Client Sample Number: **F2.5C** Lab Sample Number: **16-00010.0003**
Client Sample Description: **12"X12" Floor Tile - White w/Beige Specks, Yellow Mastic & Brown Leveling**
Client Sample Location: **Room 101 - adjacent to Room 110**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White with beige streaks vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Yellow adhesive**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Filler and Binder

Layer 3 **Brown grainy compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	68% Filler and Binder
	1% Synthetic	30% Fine Grains

Client Sample Number: **F2.10A** Lab Sample Number: **16-00010.0004**
Client Sample Description: **12"X12" Floor Tile - Light-Blue Marbled & Mastic**
Client Sample Location: **Room 107 - Middle of Room**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Light-gray with gray streaks**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Yellow and tan sticky adhesives on tan grainy material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Cellulose	77% Filler and Binder
		20% Fine Grains

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F2.10B** Lab Sample Number: **16-00010.0005**
Client Sample Description: **12"X12" Floor Tile - Light-Blue Marbled & Mastic**
Client Sample Location: **Room 107 - West Doorway**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell 12/30/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Rachel Melgoza 1/6/2016

Rachel Melgoza
Reviewed 1/6/2016 by: Rachel Melgoza

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital - First Floor*

NIH Batch Number: **16-00010**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **18**

Layer 1 **Light-gray with gray streaks**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Yellow and tan sticky adhesives on tan grainy material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	78% Fine Grains
		20% Fine Grains

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F2.10C** Lab Sample Number: **16-00010.0006**
Client Sample Description: **12"X12" Floor Tile - Light-Blue Marbled & Mastic**
Client Sample Location: **Room 107 - West Doorway**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Light-gray with gray streaks**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Yellow and tan sticky adhesives**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F2.6A** Lab Sample Number: **16-00010.0007**
Client Sample Description: **12"X12" Floor Tile - Purple Marbled & Mastic**
Client Sample Location: **Room 107**
Sample Comments: **No mastic present** Checked If Sample Not Analyzed ☐

Blue vinyl

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

(Sample results continued on next page.)

Sampled by: **Bob Brownell** **12/30/2015**
Received by: **Regina Mirabal** **1/5/2016**
Analyzed by: **Rachel Melgoza** **1/6/2016**

Rachel Melgoza

Reviewed 1/6/2016 by: Rachel Melgoza

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital - First Floor*

NIH Batch Number: **16-00010**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **18**

Client Sample Number: **F2.6B** Lab Sample Number: **16-00010.0008**
Client Sample Description: **12"X12" Floor Tile - Purple Marbled & Mastic**
Client Sample Location: **Room 204**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Blue vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 **Tan and black pliable adhesive with aggregate**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
2% Chrysotile Asbestos	5% Cellulose	8% Aggregate 50% Asphalt Filler and Binder 35% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F2.6C** Lab Sample Number: **16-00010.0009**
Client Sample Description: **12"X12" Floor Tile - Purple Marbled & Mastic**
Client Sample Location: **Room 101 - West End**
Sample Comments: **No mastic present** Checked If Sample Not Analyzed ☐

Purple vinyl

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Client Sample Number: **F2.15A** Lab Sample Number: **16-00010.0010**
Client Sample Description: **12"X12" Floor Tile - White w/Blue Specks & Mastic**
Client Sample Location: **Room 107 - Northwest Corner**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Rachel Melgoza **1/6/2016**

Rachel Melgoza
Reviewed 1/6/2016 by: Rachel Melgoza

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital - First Floor*

NIH Batch Number: **16-00010**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **18**

Layer 1 **White with blue streaks vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Yellow pliable adhesive with tan grainy material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	75% Filler and Binder
		23% Fine Grains

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F2.15B** Lab Sample Number: **16-00010.0011**
Client Sample Description: **12"X12" Floor Tile - White w/Blue Specks & Mastic**
Client Sample Location: **Room 107 - Northeast Corner**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White with blue streaks vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Yellow pliable adhesive with tan grainy material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	75% Filler and Binder
		23% Fine Grains

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F2.15C** Lab Sample Number: **16-00010.0012**
Client Sample Description: **12"X12" Floor Tile - White w/Blue Specks & Mastic**
Client Sample Location: **Room 107 - Southeast Corner**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Rachel Melgoza **1/6/2016**

Rachel Melgoza
Reviewed 1/6/2016 by: Rachel Melgoza

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital - First Floor*

NIH Batch Number: **16-00010**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **18**

Layer 1 **White with blue streaks vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Yellow pliable adhesive with tan grainy material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Cellulose	77% Filler and Binder
		20% Fine Grains

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F2.7A**
Client Sample Description: **12"X12" Floor Tile - Green Marbled & Mastic**
Client Sample Location: **Room 101 - West End**
Sample Comments:
Lab Sample Number: **16-00010.0013**
Checked If Sample Not Analyzed ☐

Layer 1 **Light-green vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Yellow sticky adhesive**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	98% Filler and Binder

Client Sample Number: **F2.7B**
Client Sample Description: **12"X12" Floor Tile - Green Marbled & Mastic**
Client Sample Location: **Room 101 - Sitting Area**
Sample Comments:
Lab Sample Number: **16-00010.0014**
Checked If Sample Not Analyzed ☐

Layer 1 **Light-green vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Yellow sticky adhesive**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Filler and Binder

(Sample results continued on next page.)

Sampled by: **Bob Brownell** **12/30/2015**
Received by: **Regina Mirabal** **1/5/2016**
Analyzed by: **Rachel Melgoza** **1/6/2016**

Rachel Melgoza

Reviewed 1/6/2016 by: Rachel Melgoza

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital - First Floor*

NIH Batch Number: **16-00010**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **18**

Client Sample Number: **F2.7C** Lab Sample Number: **16-00010.0015**
Client Sample Description: **12"X12" Floor Tile - Green Marbled & Mastic**
Client Sample Location: **Room 101 - North End**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Light-green vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Yellow sticky adhesive**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	98% Filler and Binder

Client Sample Number: **M6.2A** Lab Sample Number: **16-00010.0016**
Client Sample Description: **1'X1' Ceiling Tile - White w/Heavy Fissures & Brown Mastic**
Client Sample Location: **Room 103**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White paint on tan fibrous compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	25% Cellulose	50% Filler and Binder
	20% Mineral Wool and Beads	5% Paint

Comments: **Materials distinguishable but inseparable**

Layer 2 **Brown brittle mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	96% Filler and Binder
	2% Mineral Wool and Beads	

Client Sample Number: **M6.2B** Lab Sample Number: **16-00010.0017**
Client Sample Description: **1'X1' Ceiling Tile - White w/Heavy Fissures & Brown Mastic**
Client Sample Location: **Room 153**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell 12/30/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Rachel Melgoza 1/6/2016

Rachel Melgoza

Reviewed 1/6/2016 by: Rachel Melgoza

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

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OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital - First Floor*

NIH Batch Number: **16-00010**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **18**

Layer 1 **White paint on tan fibrous compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	25% Cellulose	48% Filler and Binder
	20% Mineral Wool and Beads	7% Paint

Comments: **Materials distinguishable but inseparable**

Layer 2 **Brown brittle mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	96% Filler and Binder
	2% Mineral Wool and Beads	

Client Sample Number: **M6.2C** Lab Sample Number: **16-00010.0018**
Client Sample Description: **1'X1' Ceiling Tile - White w/Heavy Fissures & Brown Mastic**
Client Sample Location: **Room 153**
Sample Comments:
Checked If Sample Not Analyzed ☐

Layer 1 **White paint on tan fibrous compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	30% Cellulose	48% Filler and Binder
	17% Mineral Wool and Beads	5% Paint

Comments: **Materials distinguishable but inseparable**

Layer 2 **Brown brittle mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	96% Filler and Binder
	2% Mineral Wool and Beads	

Sampled by: Bob Brownell **12/30/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Rachel Melgoza **1/6/2016**

Rachel Melgoza

Reviewed 1/6/2016 by: Rachel Melgoza

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 647-5275
Email: bbrownell@bridgeband.com
Inspector/Contact: Bob Brownell

NIH Lab Batch ID:	16-00110
Project Name:	Old Livingston Hospital
Project Number:	999-3019
Date Samples Taken:	12/30/15
Type of Analysis:	PLM

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	✓ 5 day
10 Day:	

For Lab Use Only
Sample(s) Size: ✓ Accepted ___ Rejected
Non-Conformance Memo: ___ Yes ✓ No
Package Condition: ✓ Good ___ Damaged ___ Severe Damage

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
0001	F2.5A	12"x12" Floor Tile (White w/Beige Specks) + Mastic (Yellow) + Leveling (Beige)	North End of Rm 101
2	F2.5B	"	Sitting Area of Rm 101
3	F2.5C	"	Rm 101 Adjacent to Rm 110
4	F2.10A	12"x12" Floor Tile (Lt. Blue Marbled) + Mastic	Rm 107 Middle of Rm
5	F2.10B	"	Rm 107 SE Corner
6	F2.10C	"	Rm 107 West Doorway
7	F2.6A	12"x12" Floor Tile (Purple Marbled) + Mastic	Rm 107
8	F2.6B	"	Rm 204
9	F2.6C		Rm 101 - West End
10	F2.15A	12"x12" Floor Tile (White w/Blue Specks) + Mastic	Rm 107 - NW Corner
11	F2.15B		Rm 107 - NE Corner
12	F2.15C		Rm 107 - SE Corner
13	F2.7A	12"x12" Floor Tile (Green Marbled) + Mastic	Rm 101 - West End
14	F2.7B		Rm 101 - Sitting Area
15	F2.7C		Rm 101 - North End
16	M6.2A	1'x1' Ceiling Tile (White w/Heavy Fissures) + Mastic (Beige)	Rm 103
17	M6.2B		Rm 153
18	M6.2C		Rm 153

Special Instructions: Analyze Group Method - Stop at First Positive X Yes No

Number of samples shipped this page: 18

Total number of samples shipped:

Relinquished By:	Robert Brownell	Date: 1/4/16	Time: 1700	Firm: NIH
Received By:		Date: 1/5/16	Time: 11:50	Firm: NIH Tech
Analyzed By:	Rachel Melgoza	Date: 01/06/16	Time: 1100	Firm: NIH Billings

Revised 01/20/15 RIM

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OFFICE: (206) 988-1746 FAX: (206) 988-1978
EMAIL: Rmelgoza@bridgeband.com
NVLAP Lab Code: 200511-0

1/6/2016

Bob Brownell
Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-

RE: Bulk Asbestos Fiber Analysis; Batch # 16-00011
Project Location *Old Livingston Hospital*

Dear Bob Brownell,

Thank you for choosing Northern Industrial Hygiene, Inc. as your laboratory. Enclosed you will find analytical results for the bulk samples submitted to the laboratory.

Northern Industrial Hygiene is accredited by NVLAP Lab Code: 200511-0. Accreditation by NVLAP does not indicate endorsement by NVLAP or any other government agency. All bulk samples are analyzed in accordance with U.S. EPA Method -600/M4-82-020, December 1982 and EPA Method 600/R-93-116, July 1993. "Method for Determination of Asbestos in Bulk Building Materials"(NESHAP, 40 CFR-Part 61) protocol.

Analysis is cross checked through our inter or intra laboratory quality assurance program for verification. The percent values reported are based on calibrated visual estimates by volume unless verification by Point Count is indicated. Test results reported relate only to the samples submitted by the customer to Northern Industrial Hygiene, Inc. Trace amounts of asbestos are below the limit of detection and asbestos fibers with diameters below approximately 0.25 micrometers are not detectable with the Polarized Light Microscopy (PLM) analytical procedure. A trace amount of asbestos is defined as one to five fibers in three slide mounts. Asbestos found in this amount will be reported as "< 1.0%" by PLM analysis.

This report is highly confidential and shall not be reproduced without your written approval and the written approval of Northern Industrial Hygiene, Inc.

Samples are archived for thirty (30) days following analysis. Please contact us if samples need to be archived longer than the standard holding time.

Thank you for using Northern Industrial Hygiene, Inc. If you have any questions or concerns please contact us.

Sincerely,

Jude Cummings

Reviewed by: Jude Cummings

Enclosure: Bulk Sample Results

NORTHERN INDUSTRIAL HYGIENE, INC.
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OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00011**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **13**

Client Sample Number: **M16.3A** Lab Sample Number: **16-00011.0001**
Client Sample Description: **Concrete**
Client Sample Location: **Exterior Foundation Wall Of Addition - 1989 Addition**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Medium gray gritty material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		70% Aggregate
		30% Filler and Binder

Layer 2 **Light gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	70% Aggregate
		29% Filler and Binder

Client Sample Number: **M16.3B** Lab Sample Number: **16-00011.0002**
Client Sample Description: **Concrete**
Client Sample Location: **Exterior Foundation Wall Of Addition - 1989 Addition**
Sample Comments: Checked If Sample Not Analyzed ☐

Light gray gritty compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	70% Aggregate
		29% Filler and Binder

Client Sample Number: **M16.3C** Lab Sample Number: **16-00011.0003**
Client Sample Description: **Concrete**
Client Sample Location: **Exterior Foundation Wall Of Addition - 1989 Addition**
Sample Comments: Checked If Sample Not Analyzed ☐

Medium gray gritty material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		70% Aggregate
		30% Filler and Binder

Client Sample Number: **F8.1A** Lab Sample Number: **16-00011.0004**
Client Sample Description: **6"x6" Ceramic Tile & Grout - Red**
Client Sample Location: **Room 100**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell 12/31/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Jude Cummings 1/6/2016

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00011**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **13**

Layer 1 **Red ceramic material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 20% Fine Grains 50% Filler and Binder

Layer 2 **Gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		70% Aggregate 30% Filler and Binder

Client Sample Number: **F8.1B** Lab Sample Number: **16-00011.0005**
Client Sample Description: **6"x6" Ceramic Tile & Grout - Red**
Client Sample Location: **Room 100A**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Red ceramic material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Fine Grains 30% Aggregate 40% Filler and Binder

Layer 2 **Gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		70% Aggregate 30% Filler and Binder

Client Sample Number: **F8.1C** Lab Sample Number: **16-00011.0006**
Client Sample Description: **6"x6" Ceramic Tile & Grout - Red**
Client Sample Location: **Room 100A**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/6/2016**

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00011**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **13**

Layer 1 **Red ceramic material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Fine Grains 20% Aggregate 50% Filler and Binder

Layer 2 **Gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		70% Aggregate 30% Filler and Binder

Client Sample Number: **T12.1A** Lab Sample Number: **16-00011.0007**
Client Sample Description: **Roof Drain Bowl Insulation**
Client Sample Location: **Room 101**
Sample Comments: Checked If Sample Not Analyzed ☐

White fibrous powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
15% Chrysotile Asbestos **8% Amosite Asbestos**		77% Filler and Binder

Client Sample Number: **T12.1B** Lab Sample Number: **16-00011.0008**
Client Sample Description: **Roof Drain Bowl Insulation**
Client Sample Location: **Room 101**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **T12.1C** Lab Sample Number: **16-00011.0009**
Client Sample Description: **Roof Drain Bowl Insulation**
Client Sample Location: **Room 101**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **M8.1A** Lab Sample Number: **16-00011.0010**
Client Sample Description: **Window Caulk - Gray W/White**
Client Sample Location: **Room 149**
Sample Comments: **Small sample size** Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell 12/31/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Jude Cummings 1/6/2016

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00011**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **13**

Tan, white and black materials

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
8% Chrysotile Asbestos	5% Cellulose	87% Filler and Binder

Client Sample Number:	**M8.1B**	Lab Sample Number: **16-00011.0011**
Client Sample Description:	**Window Caulk - Gray W/White**	
Client Sample Location:	**Room 155**	
Sample Comments:	**Not Analyzed Per Client Request**	Checked If Sample Not Analyzed ☑

Client Sample Number:	**M8.1C**	Lab Sample Number: **16-00011.0012**
Client Sample Description:	**Window Caulk - Gray W/White**	
Client Sample Location:	**Room 146**	
Sample Comments:	**Not Analyzed Per Client Request**	Checked If Sample Not Analyzed ☑

Client Sample Number:	**M8.2A**	Lab Sample Number: **16-00011.0013**
Client Sample Description:	**Window Glazing Compound - White**	
Client Sample Location:	**Room 106**	
Sample Comments:	**Small sample size**	Checked If Sample Not Analyzed ☐

White and gray chunks

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
4% Chrysotile Asbestos	1% Cellulose	95% Filler and Binder

Client Sample Number:	**M8.2B**	Lab Sample Number: **16-00011.0014**
Client Sample Description:	**Window Glazing Compound - White**	
Client Sample Location:	**Room 196**	
Sample Comments:	**Not Analyzed Per Client Request**	Checked If Sample Not Analyzed ☑

Client Sample Number:	**M8.2C**	Lab Sample Number: **16-00011.0015**
Client Sample Description:	**Window Glazing Compound - White**	
Client Sample Location:	**Room 201**	
Sample Comments:	**Not Analyzed Per Client Request**	Checked If Sample Not Analyzed ☑

Client Sample Number:	**M8.3A**	Lab Sample Number: **16-00011.0016**
Client Sample Description:	**Window Caulk - White**	
Client Sample Location:	**Room 106**	
Sample Comments:	**Small sample size**	Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell 12/31/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Jude Cummings 1/6/2016

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00011**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **13**

White and off-white fibrous compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
12% Chrysotile Asbestos		88% Filler and Binder

Client Sample Number:	**M8.3B**	Lab Sample Number: **16-00011.0017**
Client Sample Description:	**Window Caulk - White**	
Client Sample Location:	**Room 196**	
Sample Comments:	**Not Analyzed Per Client Request**	Checked If Sample Not Analyzed ☑

Client Sample Number:	**M8.3C**	Lab Sample Number: **16-00011.0018**
Client Sample Description:	**Window Caulk - White**	
Client Sample Location:	**Room 201**	
Sample Comments:	**Not Analyzed Per Client Request**	Checked If Sample Not Analyzed ☑

Client Sample Number:	**M8.4A**	Lab Sample Number: **16-00011.0019**
Client Sample Description:	**Window Glazing - Brown Vinyl**	
Client Sample Location:	**Room 149**	
Sample Comments:	**Small sample size**	Checked If Sample Not Analyzed ☐

Gray flexible non-fibrous material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		1% Miscellaneous Particles 99% Filler and Binder

Client Sample Number:	**M8.4B**	Lab Sample Number: **16-00011.0020**
Client Sample Description:	**Window Glazing - Brown Vinyl**	
Client Sample Location:	**Room 155**	
Sample Comments:	**Small sample size**	Checked If Sample Not Analyzed ☐

Layer 1 **Gray non-fibrous flexible material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		1% Miscellaneous Particles 99% Filler and Binder

Client Sample Number:	**M8.4C**	Lab Sample Number: **16-00011.0021**
Client Sample Description:	**Window Glazing - Brown Vinyl**	
Client Sample Location:	**Room 146**	
Sample Comments:	**Small sample size**	Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/7/2016**

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00011**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **13**

Gray non-fibrous flexible material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		2% Miscellaneous Particles
		98% Filler and Binder

Sampled by: Bob Brownell 12/31/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Jude Cummings 1/7/2016

Jude Cummings

Reviewed 1/6/2016 by: Jude Cummings

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 647-5275
Email: bbrownell@bridgeband.com
Inspector/Contact: Bob Brownell

NIH Lab Batch ID:	16-00011
Project Name:	Old Livingston Hospital
Project Number:	999-3019
Date Samples Taken:	12/31/15
Type of Analysis:	PLM

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	5 day
10 Day:	

For Lab Use Only
Sample(s) Size: (Accepted) ___Rejected
Non-Conformance Memo: ___Yes (No)
Package Condition: (Good) ___Damaged ___Severe Damage

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
1	M16-3A	Concrete (1989 Addn)	Exterior Foundation Wall of Addn
2	M16-3B	"	"
3	M16-3C	"	"
4	FR-1A	Red Ceramic Tile & Grout (6"x6")	Room 100
5	FR-1B	"	Room 100A
6	FR-1C	"	Room 100A
7	TI2-1A	Roof Drain Bowl Insulation	Room 101
8	TI2-1B	"	Room 101
9	TI2-1C	"	Room 101
10	M8-1A	Window Caulk (gray w/white)	Room 149
11	M8-1B	"	Room 155
12	M8-1C	"	Room 146
13	M8-2A	Window Glazing Compound	Room 106
14	M8-2B	(white)	Room 196
15	M8-2C	"	Room 201
16	M8-3A	Window Caulk (white)	Room 106
17	M8-3B	"	Room 196
18	M8-3C	"	Room 201
19	M8-4A	Window Glazing (Over Vinyl)	Room 149
20	M8-4B	"	Room 155
21	M8-4C	"	Room 146

Special Instructions: Analyze Group Method - Stop at First Positive X Yes No

Number of samples shipped this page: 21
Total number of samples shipped: 274

Relinquished By: Robert Brownell	Date: 1/4/16	Time: 1700	Firm: NIH
Received By:	Date: 1/5/16	Time: 12:30	Firm: NIH Courier
Analyzed By:	Date: 1.6.16	Time: 16:08	Firm: LAB

Revised 01/20/15 RIM

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NVLAP Lab Code: 200511-0

1/8/2016

Bob Brownell
Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-

RE: Bulk Asbestos Fiber Analysis; Batch # 16-00012
Project Location *Old Livingston Hospital*

Dear Bob Brownell,

Thank you for choosing Northern Industrial Hygiene, Inc. as your laboratory. Enclosed you will find analytical results for the bulk samples submitted to the laboratory.

Northern Industrial Hygiene is accredited by NVLAP Lab Code: 200511-0. Accreditation by NVLAP does not indicate endorsement by NVLAP or any other government agency. All bulk samples are analyzed in accordance with U.S. EPA Method -600/M4-82-020, December 1982 and EPA Method 600/R-93-116, July 1993. "Method for Determination of Asbestos in Bulk Building Materials"(NESHAP, 40 CFR-Part 61) protocol.

Analysis is cross checked through our inter or intra laboratory quality assurance program for verification. The percent values reported are based on calibrated visual estimates by volume unless verification by Point Count is indicated. Test results reported relate only to the samples submitted by the customer to Northern Industrial Hygiene, Inc. Trace amounts of asbestos are below the limit of detection and asbestos fibers with diameters below approximately 0.25 micrometers are not detectable with the Polarized Light Microscopy (PLM) analytical procedure. A trace amount of asbestos is defined as one to five fibers in three slide mounts. Asbestos found in this amount will be reported as "< 1.0%" by PLM analysis.

This report is highly confidential and shall not be reproduced without your written approval and the written approval of Northern Industrial Hygiene, Inc.

Samples are archived for thirty (30) days following analysis. Please contact us if samples need to be archived longer than the standard holding time.

Thank you for using Northern Industrial Hygiene, Inc. If you have any questions or concerns please contact us.

Sincerely,

Reviewed by: Jude Cummings

Enclosure: Bulk Sample Results

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

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OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00012**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Client Sample Number: **F3.5A** Lab Sample Number: **16-00012.0001**
Client Sample Description: **9"x9" Floor Tile/Green & Mastic/Black**
Client Sample Location: **Room 201 - Northeast Corner**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Green vinyl with white streaks**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
6% Chrysotile Asbestos		30% Aggregate
		64% Vinyl Filler and Binder

Layer 2 **Black Mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
8% Chrysotile Asbestos	5% Cellulose	87% Asphalt Filler and Binder

Client Sample Number: **F3.5B** Lab Sample Number: **16-00012.0002**
Client Sample Description: **9"x9" Floor Tile/Green & Mastic/Black**
Client Sample Location: **Room 201 - Southeast Corner**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **F3.5C** Lab Sample Number: **16-00012.0003**
Client Sample Description: **9"x9" Floor Tile/Green & Mastic/Black**
Client Sample Location: **Room 201 - Southeast Corner**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **F2.13A** Lab Sample Number: **16-00012.0004**
Client Sample Description: **12"x12" Floor Tile/White W/Green & Brn Specks & Mastic**
Client Sample Location: **Room 202**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White vinyl with green streaks**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate
		70% Vinyl Filler and Binder

Layer 2 **Clear mastic with gray material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	8% Cellulose	30% Fine Grains
		62% Filler and Binder

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/8/2016**

Jude Cummings

Reviewed 1/8/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00012**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Client Sample Number: **F2.13B** Lab Sample Number: **16-00012.0005**
Client Sample Description: **12"x12" Floor Tile/White W/Green & Brn Specks & Mastic**
Client Sample Location: **Room 202**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 White vinyl

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 Clear mastic with gray material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	30% Fine Grains 68% Filler and Binder

Comments: Materials distinguishable but inseparable

Client Sample Number: **F2.13C** Lab Sample Number: **16-00012.0006**
Client Sample Description: **12"x12" Floor Tile/White W/Green & Brn Specks & Mastic**
Client Sample Location: **Room 202**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 White vinyl with green and brown streaks

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 Clear mastic with gray material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Cellulose	30% Fine Grains 67% Filler and Binder

Client Sample Number: **F2.14A** Lab Sample Number: **16-00012.0007**
Client Sample Description: **12"x12" Floor Tile/Brown Marbled & Mastic**
Client Sample Location: **Room 202**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/8/2016**

Jude Cummings

Reviewed 1/8/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00012**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Layer 1 **Brown streaked vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 **Clear mastic with gray material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	5% Cellulose	30% Fine Grains 65% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F2.14B** Lab Sample Number: **16-00012.0008**
Client Sample Description: **12"x12" Floor Tile/Brown Marbled & Mastic**
Client Sample Location: **Room 202**
Sample Comments: **No mastic present** Checked If Sample Not Analyzed ☐

Brown streaked vinyl

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Client Sample Number: **F2.14C** Lab Sample Number: **16-00012.0009**
Client Sample Description: **12"x12" Floor Tile/Brown Marbled & Mastic**
Client Sample Location: **Room 202**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Brown streaked vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 **Opaque sticky material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Cellulose	10% Miscellaneous Materials 87% Filler and Binder

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/8/2016**

Jude Cummings

Reviewed 1/8/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00012**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Client Sample Number: **M3.2A** Lab Sample Number: **16-00012.0010**
Client Sample Description: **Sheetrock & Joint Compound**
Client Sample Location: **Room 137 - Southwest Corner (Original Bldg.)**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Layer 2 **White papery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	98% Cellulose	2% Filler and Binder

Layer 3 **Brown papery on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	15% Cellulose 3% Fiberglass	82% Filler and Binder

Client Sample Number: **M3.2B** Lab Sample Number: **16-00012.0011**
Client Sample Description: **Sheetrock & Joint Compound**
Client Sample Location: **Room 157 - Southwest Corner (Original Bldg.)**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White paint on white compressed powder**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Paint 70% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Layer 2 **White papery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	90% Cellulose	10% Filler and Binder

Layer 3 **Brown papery on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	15% Cellulose 2% Fiberglass	83% Filler and Binder

Comments: **Materials distinguishable but inseparable**

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/8/2016**

Jude Cummings

Reviewed 1/8/2016 by: Jude Cummings

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00012**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Client Sample Number: **M3.2C** Lab Sample Number: **16-00012.0012**
Client Sample Description: **Sheetrock & Joint Compound**
Client Sample Location: **Room 165 - Northeast Corner (Original Bldg.)**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	98% Filler and Binder

Layer 2 **White papery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	95% Cellulose	5% Filler and Binder

Layer 3 **Brown papery on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	15% Cellulose 2% Fiberglass	83% Filler and Binder

Client Sample Number: **M3.4A** Lab Sample Number: **16-00012.0013**
Client Sample Description: **Sheetrock & Joint Compound**
Client Sample Location: **Room 184 - Northeast Corner (1989 Addition)**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Dull white compressed powder material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Filler and Binder

Layer 2 **White papery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	98% Cellulose	2% Filler and Binder

Layer 3 **Bright white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	98% Filler and Binder

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/8/2016**

Jude Cummings

Reviewed 1/8/2016 by: Jude Cummings

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.		NIH Batch Number:	**16-00012**
201 South 30th Street		Client Job Number:	**999-3019**
Billings, MT 59101-		Turn Around Time:	**5 Day**
Project Location: *Old Livingston Hospital*		Samples Analyzed:	**19**

Layer 4 **Brown papery on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	12% Cellulose	85% Filler and Binder
	3% Fiberglass	

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M3.4B** Lab Sample Number: **16-00012.0014**
Client Sample Description: **Sheetrock & Joint Compound**
Client Sample Location: **Room 185 - North Wall (1989 Addition)**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Bright white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	3% Cellulose	97% Filler and Binder

Layer 2 **White papery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	97% Cellulose	3% Filler and Binder

Layer 3 **Brown papery on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	12% Cellulose	86% Filler and Binder
	2% Fiberglass	

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M3.4C** Lab Sample Number: **16-00012.0015**
Client Sample Description: **Sheetrock & Joint Compound**
Client Sample Location: **Room 188 - North Wall (1989 Addition)**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/8/2016**

Jude Cummings

Reviewed 1/8/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00012**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Layer 1 **Bright white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	4% Cellulose	96% Filler and Binder

Layer 2 **White papery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	98% Cellulose	2% Filler and Binder

Layer 3 **Brown papery on white compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	12% Cellulose	85% Filler and Binder
	3% Fiberglass	

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M3.5A** Lab Sample Number: **16-00012.0016**
Client Sample Description: **Gypsum Board - Behind Plaster**
Client Sample Location: **Room 127**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

Gray papery on white compressed powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	25% Cellulose	75% Filler and Binder

Client Sample Number: **M3.5B** Lab Sample Number: **16-00012.0017**
Client Sample Description: **Gypsum Board - Behind Plaster**
Client Sample Location: **Room 101**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

Gray papery on white compressed powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	30% Cellulose	70% Filler and Binder

Client Sample Number: **M3.5C** Lab Sample Number: **16-00012.0018**
Client Sample Description: **Gypsum Board - Behind Plaster**
Client Sample Location: **Room 151**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/8/2016**

Jude Cummings

Reviewed 1/8/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00012**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Gray papery on white compressed powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	30% Cellulose	70% Filler and Binder

Client Sample Number: **M19.1A** Lab Sample Number: **16-00012.0019**
Client Sample Description: **4"x4" Ceramic Tile/Green With Mortar & Grout**
Client Sample Location: **Room 122**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 Green on white ceramic material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		20% Fine Grains 80% Mineral Filler and Binder

Layer 2 White gritty compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		60% Fine Grains 40% Filler and Binder

Layer 3 Gray gritty compressed material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		60% Fine Grains 40% Filler and Binder

Client Sample Number: **M19.1B** Lab Sample Number: **16-00012.0020**
Client Sample Description: **4"x4" Ceramic Tile/Green With Mortar & Grout**
Client Sample Location: **Room 123**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/8/2016**

Jude Cummings

Reviewed 1/8/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00012**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Layer 1 **Green on white ceramic material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		20% Fine Grains 80% Mineral Filler and Binder

Layer 2 **White compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		50% Fine Grains 50% Filler and Binder

Layer 3 **Gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		60% Fine Grains 40% Filler and Binder

Client Sample Number: **M19.1C**
Client Sample Description: **4"x4" Ceramic Tile/Green With Mortar & Grout**
Client Sample Location: **Room 124**
Sample Comments:

Lab Sample Number: **16-00012.0021**
Checked If Sample Not Analyzed ☐

Layer 1 **Green on white ceramic material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		20% Fine Grains 80% Filler and Binder

Layer 2 **White compressed powdery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		20% Fine Grains 80% Filler and Binder

Layer 3 **Gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		60% Fine Grains 40% Filler and Binder

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/8/2016**

Jude Cummings

Reviewed 1/8/2016 by: Jude Cummings

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 647-5275
Email: bbrownell@bridgeband.com
Inspector/Contact: Bob Brownell

NIH Lab Batch ID:	16-00012
Project Name:	Old Livingston Hospital
Project Number:	999-3019
Date Samples Taken:	12/31/15
Type of Analysis:	PLM

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	5 Day
10 Day:	

For Lab Use Only
Sample(s) Size:_ (Accepted) Rejected
Non-Conformance Memo:_ Yes (No)
Package Condition: (Good) Damaged Severe Damage

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
1	F3.5A	9"x9" Floor Tile (Green) + Mastic	Rm 201 - NE Corner
2	F3.5B	(Black)	Rm 201 - SE Corner
3	F3.5C		Rm 201 - SE Corner
4	F2.13A	12"x12" Floor Tile (White w/green	Rm 202
5	F2.13B	+ brn specks) + Mastic	Rm 202
6	F2.13C		Rm 202
7	F2.14A	12"x12" Floor Tile (brn Mackled)	Rm 202
8	F2.14B	+ Mastic	Rm 202
9	F2.14C		Rm 202
10	M3.2A	Sheetrock + Joint Compound	RM 137 - SW Corner
11	M3.2B	(Original Bldg)	Rm 157 - SW Corner
12	M3.2C		Rm 165 - NE Corner
13	M3.4A	Sheetrock + Joint Compound	Rm 184 - NE Corner
14	M3.4B	(1989 Addn)	Rm 185 - N. 4L Wall
15	M3.4C		Rm 188 - N. 4L Wall
16	M13.5A	Gypsum Board (Behind Plaster)	Rm 127
17	M3.5B		Rm 101
18	M3.5C		Rm 151
19	M9.1A	Ceramic Tile - 4"x4" (Green)	Rm 122
20	M9.1B	w/ Mortar + Grout	Rm 123
21	M9.1C		Rm 124

Special Instructions: Analyze Group Method - Stop at First Positive X Yes No

Number of samples shipped this page: 21
Total number of samples shipped: 274

Relinquished By: Robert B Brownell	Date: 1/4/16	Time: 1700	Firm: NIH
Received By:	Date: 1/5/16	Time: 12:30	Firm: NIH BVH
Analyzed By:	Date: 1.8.16	Time: 12:45	Firm: LAB

NORTHERN INDUSTRIAL HYGIENE, INC.
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215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
EMAIL: Rmelgoza@bridgeband.com
NVLAP Lab Code: 200511-0

1/7/2016

Bob Brownell
Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-

RE: Bulk Asbestos Fiber Analysis; Batch # 16-00013
Project Location *Old Livingston Hospital*

Dear Bob Brownell,

Thank you for choosing Northern Industrial Hygiene, Inc. as your laboratory. Enclosed you will find analytical results for the bulk samples submitted to the laboratory.

Northern Industrial Hygiene is accredited by NVLAP Lab Code: 200511-0. Accreditation by NVLAP does not indicate endorsement by NVLAP or any other government agency. All bulk samples are analyzed in accordance with U.S. EPA Method -600/M4-82-020, December 1982 and EPA Method 600/R-93-116, July 1993. "Method for Determination of Asbestos in Bulk Building Materials"(NESHAP, 40 CFR-Part 61) protocol.

Analysis is cross checked through our inter or intra laboratory quality assurance program for verification. The percent values reported are based on calibrated visual estimates by volume unless verification by Point Count is indicated. Test results reported relate only to the samples submitted by the customer to Northern Industrial Hygiene, Inc. Trace amounts of asbestos are below the limit of detection and asbestos fibers with diameters below approximately 0.25 micrometers are not detectable with the Polarized Light Microscopy (PLM) analytical procedure. A trace amount of asbestos is defined as one to five fibers in three slide mounts. Asbestos found in this amount will be reported as "< 1.0%" by PLM analysis.

This report is highly confidential and shall not be reproduced without your written approval and the written approval of Northern Industrial Hygiene, Inc.

Samples are archived for thirty (30) days following analysis. Please contact us if samples need to be archived longer than the standard holding time.

Thank you for using Northern Industrial Hygiene, Inc. If you have any questions or concerns please contact us.

Sincerely,

Rachel Melgoza

Reviewed by: Rachel Melgoza

Enclosure: Bulk Sample Results

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00013**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Client Sample Number: **F2.12A** Lab Sample Number: **16-00013.0001**
Client Sample Description: **12"X12" Floor Tile - Rose Speckled & Mastic**
Client Sample Location: **Room 130 - Southwest Corner**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Beige vinyl with brown streaks**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
2% Chrysotile Asbestos		30% Aggregate
		68% Vinyl Filler and Binder

Layer 2 **Yellow adhesive and black asphalt mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
3% Chrysotile Asbestos	4% Cellulose	30% Filler and Binder
	3% Synthetic	60% Asphalt Filler and Binder

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F2.12B** Lab Sample Number: **16-00013.0002**
Client Sample Description: **12"X12" Floor Tile - Rose Speckled & Mastic**
Client Sample Location: **Room 130 - Northeast Corner**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **F2.12C** Lab Sample Number: **16-00013.0003**
Client Sample Description: **12"X12" Floor Tile - Rose Speckled & Mastic**
Client Sample Location: **Room 203**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **F5.4A** Lab Sample Number: **16-00013.0004**
Client Sample Description: **Blue Carpet & Mastic**
Client Sample Location: **Room 190 - North End**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell 12/31/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Rachel Melgoza 1/7/2016

Rachel Melgoza
Reviewed 1/7/2016 by: Rachel Melgoza

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00013**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Layer 1 **Blue/brown/white/gray woven fibers**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	95% Synthetic	5% Miscellaneous Particles

Layer 2 **Gray foam with yellow pliable adhesive**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		10% Filler and Binder 90% Foam

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F5.4B** Lab Sample Number: **16-00013.0005**
Client Sample Description: **Blue Carpet & Mastic**
Client Sample Location: **Room 160 - North End**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Blue/brown/white/gray woven fibers**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	95% Synthetic	5% Miscellaneous Particles

Layer 2 **Gray foam with yellow pliable adhesive**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		10% Filler and Binder 90% Foam

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F5.4C** Lab Sample Number: **16-00013.0006**
Client Sample Description: **Blue Carpet & Mastic**
Client Sample Location: **Room 162 - South End**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Blue/brown/white/gray woven fibers**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	95% Synthetic	5% Miscellaneous Particles

Layer 2 **Gray foam with clear pliable adhesive**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Synthetic	8% Filler and Binder 90% Foam

Comments: **Materials distinguishable but inseparable**

(Sample results continued on next page.)

Sampled by: **Bob Brownell** **12/31/2015**
Received by: **Regina Mirabal** **1/5/2016**
Analyzed by: **Rachel Melgoza** **1/7/2016**

Rachel Melgoza
Reviewed 1/7/2016 by: Rachel Melgoza

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00013**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Client Sample Number: **F2.11A** Lab Sample Number: **16-00013.0007**
Client Sample Description: **12"X12" Floor Tile - Off-White/TanMarbled & Mastic**
Client Sample Location: **Room 145 - Southwest Corner**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Off-white with tan streaks vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 **Black asphalt mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
3% Chrysotile Asbestos	3% Cellulose 1% Synthetic	93% Asphalt Filler and Binder

Client Sample Number: **F2.11B** Lab Sample Number: **16-00013.0008**
Client Sample Description: **12"X12" Floor Tile - Off-White/TanMarbled & Mastic**
Client Sample Location: **Room 163 - West Wall**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Off-white with tan streaks vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 **Mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
Not Analyzed Per Client		

Client Sample Number: **F2.11C** Lab Sample Number: **16-00013.0009**
Client Sample Description: **12"X12" Floor Tile - Off-White/TanMarbled & Mastic**
Client Sample Location: **Room 174 - North Wall**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Rachel Melgoza **1/7/2016**

Rachel Melgoza
Reviewed 1/7/2016 by: Rachel Melgoza

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00013**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Layer 1 **Off-white with tan streaks vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		30% Aggregate 70% Vinyl Filler and Binder

Layer 2 **Mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
Not Analyzed Per Client		

Client Sample Number: **M10.2A** Lab Sample Number: **16-00013.0010**
Client Sample Description: **Sink Undercoat - White**
Client Sample Location: **Room 157**
Sample Comments: Checked If Sample Not Analyzed ☐

White fibrous lumpy material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	13% Cellulose	87% Filler and Binder

Client Sample Number: **M10.2B** Lab Sample Number: **16-00013.0011**
Client Sample Description: **Sink Undercoat - White**
Client Sample Location: **Room 158**
Sample Comments: Checked If Sample Not Analyzed ☐

White fibrous lumpy material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	13% Cellulose	87% Filler and Binder

Client Sample Number: **M10.2C** Lab Sample Number: **16-00013.0012**
Client Sample Description: **Sink Undercoat - White**
Client Sample Location: **Room 195**
Sample Comments: Checked If Sample Not Analyzed ☐

White fibrous lumpy material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	13% Cellulose	87% Filler and Binder

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Rachel Melgoza **1/7/2016**

Rachel Melgoza

Reviewed 1/7/2016 by: Rachel Melgoza

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00013**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Client Sample Number: **M10.3A** Lab Sample Number: **16-00013.0013**
Client Sample Description: **Sink Undercoat - Gray**
Client Sample Location: **Room 159**
Sample Comments: Checked If Sample Not Analyzed ☐

Gray fibrous lumpy material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	15% Cellulose	85% Filler and Binder

Client Sample Number: **M10.3B** Lab Sample Number: **16-00013.0014**
Client Sample Description: **Sink Undercoat - Gray**
Client Sample Location: **Room 205**
Sample Comments: Checked If Sample Not Analyzed ☐

Gray fibrous lumpy material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	15% Cellulose	85% Filler and Binder

Client Sample Number: **M10.3C** Lab Sample Number: **16-00013.0015**
Client Sample Description: **Sink Undercoat - Gray**
Client Sample Location: **Room 205**
Sample Comments: Checked If Sample Not Analyzed ☐

Gray fibrous lumpy material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	15% Cellulose	85% Filler and Binder

Client Sample Number: **F1.6A** Lab Sample Number: **16-00013.0016**
Client Sample Description: **12"X12" Vinyl Sheet Flooring - White Tile Pattern & Mastic**
Client Sample Location: **Room 161 - NW Corner**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White/tan vinyl with white fibrous backing and yellow adhesive

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	10% Cellulose	40% Filler and Binder
	5% Fiberglass	25% Foam
		20% Vinyl Filler and Binder

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Rachel Melgoza **1/7/2016**

Rachel Melgoza

Reviewed 1/7/2016 by: Rachel Melgoza

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00013**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Client Sample Number: **F1.6B** Lab Sample Number: **16-00013.0017**
Client Sample Description: **12"X12" Vinyl Sheet Flooring - White Tile Pattern & Mastic**
Client Sample Location: **Room 161 - NW Corner**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White/tan vinyl with white fibrous backing and yellow adhesive

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	10% Cellulose	40% Filler and Binder
	5% Fiberglass	25% Foam
		20% Vinyl Filler and Binder

Client Sample Number: **F1.6C** Lab Sample Number: **16-00013.0018**
Client Sample Description: **12"X12" Vinyl Sheet Flooring - White Tile Pattern & Mastic**
Client Sample Location: **Room 161 - NW Corner**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White/tan vinyl with white fibrous backing and yellow adhesive

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	10% Cellulose	40% Filler and Binder
	5% Fiberglass	25% Foam
		20% Vinyl Filler and Binder

Client Sample Number: **F3.4A** Lab Sample Number: **16-00013.0019**
Client Sample Description: **9"X9" Gray FloorTile & Mastic with Leveling Compound**
Client Sample Location: **Room 160**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Clear adhesive on white coarse compressed powder**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	98% Filler and Binder
	1% Synthetic	

Comments: **Materials distinguishable but inseparable**

Layer 2 **Tan vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
5% Chrysotile Asbestos		30% Aggregate
		65% Vinyl Filler and Binder

(Sample results continued on next page.)

Sampled by: **Bob Brownell** **12/31/2015**
Received by: **Regina Mirabal** **1/5/2016**
Analyzed by: **Rachel Melgoza** **1/7/2016**

Rachel Melgoza

Reviewed 1/7/2016 by: Rachel Melgoza

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00013**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Layer 3 Black fibrous asphalt

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
4% Chrysotile Asbestos	2% Cellulose	94% Asphalt Filler and Binder

Client Sample Number: **F3.4B** Lab Sample Number: **16-00013.0020**
Client Sample Description: **9"X9" Gray FloorTile & Mastic with Leveling Compound**
Client Sample Location: **Room 160**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 Clear adhesive on white coarse compressed powder

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose 1% Synthetic	98% Filler and Binder

Layer 2 Vinyl

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
Not Analyzed Per Client		

Layer 3 Mastic

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
Not Analyzed Per Client		

Client Sample Number: **F3.4C** Lab Sample Number: **16-00013.0021**
Client Sample Description: **9"X9" Gray FloorTile & Mastic with Leveling Compound**
Client Sample Location: **Room 160**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 Clear adhesive on white coarse compressed powder

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose 1% Synthetic	98% Filler and Binder

Layer 2 Vinyl

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
Not Analyzed Per Client		

Layer 3 Mastic

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
Not Analyzed Per Client		

(Sample results continued on next page.)

Sampled by: Bob Brownell 12/31/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Rachel Melgoza 1/7/2016

Rachel Melgoza

Reviewed 1/7/2016 by: Rachel Melgoza

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00013**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Sampled by:	**Bob Brownell**	**12/31/2015**
Received by:	**Regina Mirabal**	**1/5/2016**
Analyzed by:	**Rachel Melgoza**	**1/7/2016**

Rachel Melgoza

Reviewed 1/7/2016 by: Rachel Melgoza

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 647-5275
Email: bbrownell@bridgeband.com
Inspector/Contact: Bob Brownell

NIH Lab Batch ID:	16-00013
Project Name:	Old Livingston Hospital
Project Number:	999-3019
Date Samples Taken:	12/31/15
Type of Analysis:	PLM

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	5-day
10 Day:	

For Lab Use Only
Sample(s) Size: ✓ Accepted ___ Rejected
Non-Conformance Memo: ___ Yes ✓ No
Package Condition: ✓ Good ___ Damaged ___ Severe Damage

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
00013	F2.12A	12"x12" Floor Tile (cream, marbled)	Rm 130 - SW Corner
2	F2.12B	+ Mastic	Rm 130 - NE Corner
3	F2.12C	↓	Rm 203
4	F5.4A	Blue Carpet + Mastic	Rm 190 - North End
5	F5.4B		Rm 160 - North End
6	F5.4C	↓	Rm 162 - South End
7	F2.11A	12"x12" Floor Tile (off-white + Tan	Rm 145 - SW Corner
8	F2.11B	marbled) + Mastic	Rm 163 - West Wall
9	F2.11C	↓	Rm 174 - North Wall
10	M10.2A	Sink Undercoat (white)	Rm 157
11	M10.2B	↓	Rm 158
12	M10.2C	↓	Rm 195
13	M10.3A	Sink Undercoat (grey)	Rm 159
14	M10.3B	↓	Rm 205
15	M10.3C	↓	Rm 205
16	F1.6A	Vinyl Sheet Flooring - (12"x12" Tile	Rm 161 - NW Corner
17	F1.6B	Pattern, white) + Mastic	Rm 161 - NW Corner
18	F1.6C	↓	Rm 161 - NW Corner
19	F3.4A	9"x9" Floor Tile (grey) + Mastic	Rm 160
20	F3.4B	+ leveling Compound	Rm 160
21	F3.4C	↓	Rm 160

Special Instructions: Analyze Group Method - Stop at First Positive X Yes No

Number of samples shipped this page: 21

Total number of samples shipped: 274

Relinquished By: Robert B Brownell	Date: 1/4/16	Time: 1700	Firm: NIH	
Received By:	Date: 1/5/16	Time: 12:30	Firm: NIH BVRL	
Analyzed By: Rachel Murphy	Date: 01/07/16	Time: 0730	Firm: NIH Butte	

Revised 01/20/15 RIM

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EMAIL: Rmelgoza@bridgeband.com
NVLAP Lab Code: 200511-0

1/7/2016

Bob Brownell
Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-

RE: Bulk Asbestos Fiber Analysis; Batch # 16-00014
Project Location *Old Livingston Hospital*

Dear Bob Brownell,

Thank you for choosing Northern Industrial Hygiene, Inc. as your laboratory. Enclosed you will find analytical results for the bulk samples submitted to the laboratory.

Northern Industrial Hygiene is accredited by NVLAP Lab Code: 200511-0. Accreditation by NVLAP does not indicate endorsement by NVLAP or any other government agency. All bulk samples are analyzed in accordance with U.S. EPA Method -600/M4-82-020, December 1982 and EPA Method 600/R-93-116, July 1993. "Method for Determination of Asbestos in Bulk Building Materials"(NESHAP, 40 CFR-Part 61) protocol.

Analysis is cross checked through our inter or intra laboratory quality assurance program for verification. The percent values reported are based on calibrated visual estimates by volume unless verification by Point Count is indicated. Test results reported relate only to the samples submitted by the customer to Northern Industrial Hygiene, Inc. Trace amounts of asbestos are below the limit of detection and asbestos fibers with diameters below approximately 0.25 micrometers are not detectable with the Polarized Light Microscopy (PLM) analytical procedure. A trace amount of asbestos is defined as one to five fibers in three slide mounts. Asbestos found in this amount will be reported as "< 1.0%" by PLM analysis.

This report is highly confidential and shall not be reproduced without your written approval and the written approval of Northern Industrial Hygiene, Inc.

Samples are archived for thirty (30) days following analysis. Please contact us if samples need to be archived longer than the standard holding time.

Thank you for using Northern Industrial Hygiene, Inc. If you have any questions or concerns please contact us.

Sincerely,

Jude Cummings

Reviewed by: Jude Cummings

Enclosure: Bulk Sample Results

NORTHERN INDUSTRIAL HYGIENE, INC.
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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00014**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **17**

Client Sample Number: **F3.3A** Lab Sample Number: **16-00014.0001**
Client Sample Description: **9"x9" Floor Tile/Red & Mastic/Black**
Client Sample Location: **Room 106**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Red vinyl with white streaks**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
8% Chrysotile Asbestos		30% Aggregate
		62% Vinyl Filler and Binder

Layer 2 **Black Mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
5% Chrysotile Asbestos	3% Cellulose	92% Asphalt Filler and Binder

Client Sample Number: **F3.3B** Lab Sample Number: **16-00014.0002**
Client Sample Description: **9"x9" Floor Tile/Red & Mastic/Black**
Client Sample Location: **Room 106**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **F3.3C** Lab Sample Number: **16-00014.0003**
Client Sample Description: **9"x9" Floor Tile/Red & Mastic/Black**
Client Sample Location: **Room 106**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **M10.1A** Lab Sample Number: **16-00014.0004**
Client Sample Description: **Sink Undercoat - Black**
Client Sample Location: **Room 126**
Sample Comments: Checked If Sample Not Analyzed ☐

Black asphalt

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
4% Chrysotile Asbestos	5% Cellulose	91% Asphalt Filler and Binder

Client Sample Number: **M10.1B** Lab Sample Number: **16-00014.0005**
Client Sample Description: **Sink Undercoat - Black**
Client Sample Location: **Room 127**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

(Sample results continued on next page.)

Sampled by: Bob Brownell 12/31/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Jude Cummings 1/7/2016

Jude Cummings

Reviewed 1/7/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00014**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **17**

Client Sample Number: **M10.1C** Lab Sample Number: **16-00014.0006**
Client Sample Description: **Sink Undercoat - Black**
Client Sample Location: **Room 111**
Sample Comments: **Not Analyzed Per Client Request** Checked If Sample Not Analyzed ☑

Client Sample Number: **F1.4A** Lab Sample Number: **16-00014.0007**
Client Sample Description: **Vinyl Sheet Flooring/Purple/Gray & Mastic**
Client Sample Location: **Room 109**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Black, tan and brown vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	6% Cellulose	94% Vinyl Filler and Binder

Layer 2 **Tan woven fibers with tan mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	40% Cellulose	60% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F1.4B** Lab Sample Number: **16-00014.0008**
Client Sample Description: **Vinyl Sheet Flooring/Purple/Gray & Mastic**
Client Sample Location: **Room 109**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Black, tan and brown vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	5% Cellulose	95% Vinyl Filler and Binder

Layer 2 **Tan woven fibers with tan mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	45% Cellulose	55% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **F1.4C** Lab Sample Number: **16-00014.0009**
Client Sample Description: **Vinyl Sheet Flooring/Purple/Gray & Mastic**
Client Sample Location: **Room 109**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/7/2016**

Jude Cummings

Reviewed 1/7/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00014**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **17**

Layer 1 **Black, tan and brown vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	5% Cellulose	95% Vinyl Filler and Binder

Layer 2 **Tan woven fibers**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	98% Cellulose	2% Filler and Binder

Client Sample Number: **F5.3A** Lab Sample Number: **16-00014.0010**
Client Sample Description: **Carpet/Brown & Mastic**
Client Sample Location: **Room 137**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

Blue, tan and white carpet fibers with off-white mastic residue

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	94% Synthetic	2% Miscellaneous Particles 4% Filler and Binder

Client Sample Number: **F5.3B** Lab Sample Number: **16-00014.0011**
Client Sample Description: **Carpet/Brown & Mastic**
Client Sample Location: **Room 159**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Tan, white and gray carpet fibers on gray backing**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	75% Synthetic	2% Miscellaneous Particles 23% Filler and Binder

Layer 2 **Off-white mastic residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose 2% Synthetic	97% Filler and Binder

Client Sample Number: **F5.3C** Lab Sample Number: **16-00014.0012**
Client Sample Description: **Carpet/Brown & Mastic**
Client Sample Location: **Room 189**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/7/2016**

Jude Cummings
Reviewed 1/7/2016 by: Jude Cummings

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Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00014**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **17**

Layer 1 **Blue, white and tan linear carpet fibers on brown backing**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	75% Synthetic	3% Miscellaneous Particles
		22% Filler and Binder

Layer 2 **Off-white mastic residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Synthetic	98% Filler and Binder

Client Sample Number: **M12.5A** Lab Sample Number: **16-00014.0013**
Client Sample Description: **Cove Base Mastic - White**
Client Sample Location: **Room 126**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Tan vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Tan mastic with white powdery residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Filler and Binder

Client Sample Number: **M12.5B** Lab Sample Number: **16-00014.0014**
Client Sample Description: **Cove Base Mastic - White**
Client Sample Location: **Room 110**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Off-white vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Off-white mastic with brown fibers**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	12% Cellulose	88% Filler and Binder

Client Sample Number: **M12.5C** Lab Sample Number: **16-00014.0015**
Client Sample Description: **Cove Base Mastic - White**
Client Sample Location: **Room 205**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/7/2016**

Jude Cummings

Reviewed 1/7/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00014**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **17**

Layer 1 **Medium brown vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **White mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Filler and Binder

Client Sample Number: **M12.6A** Lab Sample Number: **16-00014.0016**
Client Sample Description: **Cove Base Mastic - Yellowish Brown**
Client Sample Location: **Room 116**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Medium brown vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Dark yellow mastic with fibrous residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	20% Cellulose	80% Filler and Binder

Comments: **Materials distinguishable but inseparable**

Client Sample Number: **M12.6B** Lab Sample Number: **16-00014.0017**
Client Sample Description: **Cove Base Mastic - Yellowish Brown**
Client Sample Location: **Room 116**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Tan vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Orange mastic with fibrous residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	15% Cellulose	85% Filler and Binder

Client Sample Number: **M12.6C** Lab Sample Number: **16-00014.0018**
Client Sample Description: **Cove Base Mastic - Yellowish Brown**
Client Sample Location: **Room 116**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/7/2016**

Jude Cummings

Reviewed 1/7/2016 by: Jude Cummings

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NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00014**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **17**

Layer 1 **Tan vinyl**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Orange mastic with fibrous residue**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	15% Cellulose	85% Filler and Binder

Client Sample Number: **F2.16A** Lab Sample Number: **16-00014.0019**
Client Sample Description: **12"x12" Floor Tile/White/Black Granite & Mastic**
Client Sample Location: **Room 151 - West End**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White vinyl with black and gray lines**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Black Mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
5% Chrysotile Asbestos	3% Cellulose	92% Asphalt Filler and Binder

Client Sample Number: **F2.16B** Lab Sample Number: **16-00014.0020**
Client Sample Description: **12"x12" Floor Tile/White/Black Granite & Mastic**
Client Sample Location: **Room 151 - Middle**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White vinyl with black and gray lines**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Black Mastic**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
Not Analyzed Per Client		

Client Sample Number: **F2.16C** Lab Sample Number: **16-00014.0021**
Client Sample Description: **12"x12" Floor Tile/White/Black Granite & Mastic**
Client Sample Location: **Room 151 - East End**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Jude Cummings **1/7/2016**

Jude Cummings

Reviewed 1/7/2016 by: Jude Cummings

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215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00014**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **17**

Layer 1 **White vinyl with black and gray lines**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Vinyl Filler and Binder

Layer 2 **Black asphalt**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
Not Analyzed Per Client		

Sampled by: Bob Brownell 12/31/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Jude Cummings 1/7/2016

Jude Cummings

Reviewed 1/7/2016 by: Jude Cummings

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 647-5275
Email: bbrownell@bridgeband.com
Inspector/Contact: Bob Brownell

NIH Lab Batch ID:	16-00014
Project Name:	Old Livingston Hospital
Project Number:	999-3019
Date Samples Taken:	12/31/15
Type of Analysis:	PLM

For Lab Use Only
Sample(s) Size: Accepted ~~Rejected~~
Non-Conformance Memo: ~~Yes~~ No
Package Condition: Good ~~Damaged~~ ~~Severe Damage~~

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	5-day
10 Day:	

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
1	F3.3A	9"x9" Floor Tile (Red) +	Rm 106
2	F3.3B	Mastic (Black)	Rm 106
3	F3.3C	"	Rm 106
4	M10.1A	Sink Underlayment (Black)	Rm 126
5	M10.1B	"	Rm 127
6	M10.1C	"	Rm 111
7	F1.4A	Vinyl Sheet Flooring (Purple + Gray)	Rm 109
8	F1.4B	+ Mastic	Rm 109
9	F1.4C	"	Rm 109
10	F5.3A	Carpet (Brown) + Mastic	Rm 137
11	F5.3B	"	Rm 159
12	F5.3C	"	Rm 189
13	M12.5A	Cove Base Mastic (White)	Rm 126
14	M12.5B	"	Rm 110
15	M12.5C	"	Rm 205
16	M12.6A	Cove Base Mastic (Yellowish Brown)	~~Rm~~ Rm 116
17	M12.6B	"	Rm 116
18	M12.6C	"	Rm 116
19	F2.16A	12"x12" Floor Tile (White + Black	Rm 151 - West End
20	F2.16B	granite) + Mastic	Rm 151 - Middle
21	F2.16C	"	Rm 151 - East End

Special Instructions: Analyze Group Method - Stop at First Positive X Yes No

Number of samples shipped this page: 21
Total number of samples shipped: 274

Relinquished By: Robert A Brownell	Date: 1/4/16	Time: 1700	Firm: NIH
Received By:	Date: 1/5/16	Time: 12:30	Firm: NIH Driller
Analyzed By:	Date: 1/7/16	Time: 15:15	Firm: NIH

Revised 01/20/15 RIM

NORTHERN
INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
EMAIL: Rmelgoza@bridgeband.com
NVLAP Lab Code: 200511-0

1/11/2016

Bob Brownell
Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-

RE: Bulk Asbestos Fiber Analysis; Batch # 16-00015
Project Location *Old Livingston Hospital*

Dear Bob Brownell,

Thank you for choosing Northern Industrial Hygiene, Inc. as your laboratory. Enclosed you will find analytical results for the bulk samples submitted to the laboratory.

Northern Industrial Hygiene is accredited by NVLAP Lab Code: 200511-0. Accreditation by NVLAP does not indicate endorsement by NVLAP or any other government agency. All bulk samples are analyzed in accordance with U.S. EPA Method -600/M4-82-020, December 1982 and EPA Method 600/R-93-116, July 1993. "Method for Determination of Asbestos in Bulk Building Materials"(NESHAP, 40 CFR-Part 61) protocol.

Analysis is cross checked through our inter or intra laboratory quality assurance program for verification. The percent values reported are based on calibrated visual estimates by volume unless verification by Point Count is indicated. Test results reported relate only to the samples submitted by the customer to Northern Industrial Hygiene, Inc. Trace amounts of asbestos are below the limit of detection and asbestos fibers with diameters below approximately 0.25 micrometers are not detectable with the Polarized Light Microscopy (PLM) analytical procedure. A trace amount of asbestos is defined as one to five fibers in three slide mounts. Asbestos found in this amount will be reported as "< 1.0%" by PLM analysis.

This report is highly confidential and shall not be reproduced without your written approval and the written approval of Northern Industrial Hygiene, Inc.

Samples are archived for thirty (30) days following analysis. Please contact us if samples need to be archived longer than the standard holding time.

Thank you for using Northern Industrial Hygiene, Inc. If you have any questions or concerns please contact us.

Sincerely,

Rachel Melgoza

Reviewed by: Rachel Melgoza

Enclosure: Bulk Sample Results

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00015**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Client Sample Number: **M7.1A** Lab Sample Number: **16-00015.0001**
Client Sample Description: **Plaster Wall System**
Client Sample Location: **Room 101 - North End, over Expanded Metal/Gypsum Board**
Sample Comments: Checked If Sample Not Analyzed ☐

White grainy compressed powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Mineral Fibers	75% Filler and Binder
		23% Perlite

Client Sample Number: **M7.1B** Lab Sample Number: **16-00015.0002**
Client Sample Description: **Plaster Wall System**
Client Sample Location: **Room 101 - South End, over Expanded Metal/Gypsum Board**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

Red and yellow paint layers on white grainy compressed powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Mineral Fibers	55% Filler and Binder
		19% Paint
		25% Perlite

Client Sample Number: **M7.1C** Lab Sample Number: **16-00015.0003**
Client Sample Description: **Plaster Wall System**
Client Sample Location: **Room 140, over Expanded Metal/Gypsum Board**
Sample Comments: Checked If Sample Not Analyzed ☐

White grainy compressed powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Mineral Fibers	73% Filler and Binder
		25% Perlite

Client Sample Number: **M7.1D** Lab Sample Number: **16-00015.0004**
Client Sample Description: **Plaster Wall System**
Client Sample Location: **Room 127, over Expanded Metal/Gypsum Board**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Rachel Melgoza **1/8/2016**

Rachel Melgoza

Reviewed 1/11/2016 by: Rachel Melgoza

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

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OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00015**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

White grainy compressed powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Mineral Fibers	75% Filler and Binder
		23% Perlite

Client Sample Number: **M7.1E** Lab Sample Number: **16-00015.0005**
Client Sample Description: **Plaster Wall System**
Client Sample Location: **Room 162 - North End, over Expanded Metal/Gypsum Board**
Sample Comments: Checked If Sample Not Analyzed ☐

White grainy compressed powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Mineral Fibers	73% Filler and Binder
		25% Perlite

Client Sample Number: **M7.1F** Lab Sample Number: **16-00015.0006**
Client Sample Description: **Plaster Wall System**
Client Sample Location: **Room 162 - South End, over Expanded Metal/Gypsum Board**
Sample Comments: Checked If Sample Not Analyzed ☐

White grainy compressed powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Mineral Fibers	75% Filler and Binder
		23% Perlite

Client Sample Number: **M7.1G** Lab Sample Number: **16-00015.0007**
Client Sample Description: **Plaster Wall System**
Client Sample Location: **Room 193 - North End, over Expanded Metal/Gypsum Board**
Sample Comments: **Materials distinguishable but inseparable** Checked If Sample Not Analyzed ☐

White and green paint layers on white grainy compressed powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Mineral Fibers	60% Filler and Binder
		13% Paint
		25% Perlite

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Rachel Melgoza **1/8/2016**

Rachel Melgoza

Reviewed 1/11/2016 by: Rachel Melgoza

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00015**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Client Sample Number: **F7.1A** Lab Sample Number: **16-00015.0008**
Client Sample Description: **1"X1" Brown Ceramic Tile & Grout**
Client Sample Location: **Room 164**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White and tan with black speck ceramic material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Mineral Filler and Binder

Layer 2 **Gray gritty material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	65% Aggregate 33% Filler and Binder

Client Sample Number: **F7.1B** Lab Sample Number: **16-00015.0009**
Client Sample Description: **1"X1" Brown Ceramic Tile & Grout**
Client Sample Location: **Room 172 - Restroom**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White and tan with black speck ceramic material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Mineral Filler and Binder

Layer 2 **Gray gritty material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	69% Aggregate 30% Filler and Binder

Client Sample Number: **F7.1C** Lab Sample Number: **16-00015.0010**
Client Sample Description: **1"X1" Brown Ceramic Tile & Grout**
Client Sample Location: **Room 185 - Restroom**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell 12/31/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Rachel Melgoza 1/8/2016

Rachel Melgoza

Reviewed 1/11/2016 by: Rachel Melgoza

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

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OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00015**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Layer 1 **White and tan with black speck ceramic material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Mineral Filler and Binder

Layer 2 **Gray gritty material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	2% Cellulose	67% Aggregate 31% Filler and Binder

Client Sample Number: **M8.5A** Lab Sample Number: **16-00015.0011**
Client Sample Description: **4"X4" White Ceramic Tile - with Mastic & Grout**
Client Sample Location: **Room 164**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White ceramic material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Mineral Filler and Binder

Layer 2 **Light-brown adhesive**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Filler and Binder

Comments: **No grout present**

Client Sample Number: **M8.5B** Lab Sample Number: **16-00015.0012**
Client Sample Description: **4"X4" White Ceramic Tile - with Mastic & Grout**
Client Sample Location: **Room 172 - Restroom**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White ceramic material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Mineral Filler and Binder

Layer 2 **Light-brown adhesive**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Filler and Binder

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Rachel Melgoza **1/11/2016**

Rachel Melgoza

Reviewed 1/11/2016 by: Rachel Melgoza

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00015**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Client Sample Number: **M8.5C** Lab Sample Number: **16-00015.0013**
Client Sample Description: **4"X4" White Ceramic Tile - with Mastic & Grout**
Client Sample Location: **Room 185 - Restroom**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **White ceramic material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		100% Mineral Filler and Binder

Layer 2 **Light-brown adhesive**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	99% Filler and Binder

Client Sample Number: **M17.3A** Lab Sample Number: **16-00015.0014**
Client Sample Description: **Red Clay Block & Mortar**
Client Sample Location: **Room 101**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Red gritty/grainy compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		10% Aggregate 60% Filler and Binder 30% Fine Grains

Layer 2 **Tan and gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		60% Aggregate 40% Filler and Binder

Client Sample Number: **M17.3B** Lab Sample Number: **16-00015.0015**
Client Sample Description: **Red Clay Block & Mortar**
Client Sample Location: **Room 163**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Rachel Melgoza **1/11/2016**

Rachel Melgoza

Reviewed 1/11/2016 by: Rachel Melgoza

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00015**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Layer 1 **Red gritty/grainy compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		10% Aggregate 60% Filler and Binder 30% Fine Grains

Layer 2 **Tan and gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		60% Aggregate 40% Filler and Binder

Client Sample Number: **M17.3C** Lab Sample Number: **16-00015.0016**
Client Sample Description: **Red Clay Block & Mortar**
Client Sample Location: **Room 170**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Red gritty/grainy compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		10% Aggregate 60% Filler and Binder 30% Fine Grains

Layer 2 **Tan and gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		60% Aggregate 40% Filler and Binder

Client Sample Number: **M17.4A** Lab Sample Number: **16-00015.0017**
Client Sample Description: **Light-Brown Brick & Mortar**
Client Sample Location: **Entry Way Near 192 - Exterior**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell 12/31/2015
Received by: Regina Mirabal 1/5/2016
Analyzed by: Rachel Melgoza 1/11/2016

Rachel Melgoza

Reviewed 1/11/2016 by: Rachel Melgoza

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00015**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Layer 1 **Light-brown gritty/grainy compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		15% Aggregate 60% Filler and Binder 25% Fine Grains

Layer 2 **Tan and gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		60% Aggregate 40% Filler and Binder

Client Sample Number: **M17.4B** Lab Sample Number: **16-00015.0018**
Client Sample Description: **Light-Brown Brick & Mortar**
Client Sample Location: **Room 154 - Southeast Corner - Exterior**
Sample Comments: Checked If Sample Not Analyzed ☐

Layer 1 **Light-brown gritty/grainy compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		15% Aggregate 60% Filler and Binder 25% Fine Grains

Layer 2 **Tan and gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		60% Aggregate 40% Filler and Binder

Client Sample Number: **M17.4C** Lab Sample Number: **16-00015.0019**
Client Sample Description: **Light-Brown Brick & Mortar**
Client Sample Location: **Room 122 - Northwest Corner - Exterior**
Sample Comments: Checked If Sample Not Analyzed ☐

(Sample results continued on next page.)

Sampled by: Bob Brownell **12/31/2015**
Received by: Regina Mirabal **1/5/2016**
Analyzed by: Rachel Melgoza **1/11/2016**

Rachel Melgoza

Reviewed 1/11/2016 by: Rachel Melgoza

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00015**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **19**

Layer 1 **Light-brown gritty/grainy compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		15% Aggregate 60% Filler and Binder 25% Fine Grains

Layer 2 **Tan and gray gritty compressed material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected		60% Aggregate 40% Filler and Binder

Sampled by: Bob Brownell	**12/31/2015**	
Received by: Regina Mirabal	**1/5/2016**	
Analyzed by: Rachel Melgoza	**1/11/2016**	Rachel Melgoza

Reviewed 1/11/2016 by: Rachel Melgoza

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 647-5275
Email: bbrownell@bridgeband.com
Inspector/Contact: Bob Brownell

NIH Lab Batch ID:	16-00015
Project Name:	Old Livingston Hospital
Project Number:	999-3019
Date Samples Taken:	12/21/15
Type of Analysis:	PLM

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	5-Day
10 Day:	

For Lab Use Only
Sample(s) Size: ✓ Accepted ___ Rejected
Non-Conformance Memo: ___ Yes ✓ No
Package Condition: ✓ Good ___ Damaged ___ Severe Damage

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
001	M7.1A	Plaster Wall System (Cover	Rm 101 - North End
2	M7.1B	Expanded Metal & Gyp Board)	Rm 101 - South End
3	M7.1C		Rm 140
4	M7.1D		Rm 127
5	M7.1E		Rm 162 - North End
6	M7.1F		Rm 162 - South End
7	M7.1G		Rm 193 - North End
8	F7.1A	1"x1" Ceramic Tile (Brown) +	Rm 164
9	F7.1B	Grout	Rm 172 - RR
10	F7.1C		Rm 185 - RR
11	M8.5A	4"x4" Ceramic Tile (white)	Rm 164
12	M8.5B	+ Mastic + Grout	Rm 172 - RR
13	M8.5C		Rm 185 - RR
14	M17.3A	Red Clay Block + Mortar	Rm 101
15	M17.3B		Rm 163
16	M17.3C		Rm 170
17	M17.4A	Lt Brown Brick + Mortar	Entryway Near 192
18	M17.4B	(Exterior)	Rm 154 - SE Corner
19	M17.4C		Rm 122 - NW Corner

Special Instructions: Analyze Group Method - Stop at First Positive ✓ Yes ___ No

Number of samples shipped this page: 19
Total number of samples shipped: 274

Relinquished By:	Robert Brownell	Date: 1/4/16	Time: 17:00	Firm: NIH
Received By:	[illegible]	Date: 1/5/16	Time: 12:30	Firm: NIH BVR
Analyzed By:	Rachel Milgore	Date: 01/08/16	Time: 0730	Firm: VEH Bozeman

Revised 01/20/15 RIM

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
EMAIL: Rmelgoza@bridgeband.com
NVLAP Lab Code: 200511-0

2/2/2016

Bob Brownell
Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-

RE: Bulk Asbestos Fiber Analysis; Batch # 16-00100
Project Location *Old Livingston Hospital*

Dear Bob Brownell,

Thank you for choosing Northern Industrial Hygiene, Inc. as your laboratory. Enclosed you will find analytical results for the bulk samples submitted to the laboratory.

Northern Industrial Hygiene is accredited by NVLAP Lab Code: 200511-0. Accreditation by NVLAP does not indicate endorsement by NVLAP or any other government agency. All bulk samples are analyzed in accordance with U.S. EPA Method -600/M4-82-020, December 1982 and EPA Method 600/R-93-116, July 1993. "Method for Determination of Asbestos in Bulk Building Materials"(NESHAP, 40 CFR-Part 61) protocol.

Analysis is cross checked through our inter or intra laboratory quality assurance program for verification. The percent values reported are based on calibrated visual estimates by volume unless verification by Point Count is indicated. Test results reported relate only to the samples submitted by the customer to Northern Industrial Hygiene, Inc. Trace amounts of asbestos are below the limit of detection and asbestos fibers with diameters below approximately 0.25 micrometers are not detectable with the Polarized Light Microscopy (PLM) analytical procedure. A trace amount of asbestos is defined as one to five fibers in three slide mounts. Asbestos found in this amount will be reported as "< 1.0%" by PLM analysis.

This report is highly confidential and shall not be reproduced without your written approval and the written approval of Northern Industrial Hygiene, Inc.

Samples are archived for thirty (30) days following analysis. Please contact us if samples need to be archived longer than the standard holding time.

Thank you for using Northern Industrial Hygiene, Inc. If you have any questions or concerns please contact us.

Sincerely,

Rachel Melgoza

Reviewed by: Rachel Melgoza

Enclosure: Bulk Sample Results

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00100**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **6**

Client Sample Number: **D-1** Lab Sample Number: **16-00100.0001**
Client Sample Description: **Paper Debris - White**
Client Sample Location: **East Crawlspace**
Sample Comments: Checked If Sample Not Analyzed ☐

White fibrous papery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
45% Chrysotile Asbestos	15% Cellulose	40% Filler and Binder

Client Sample Number: **D-2** Lab Sample Number: **16-00100.0002**
Client Sample Description: **Hard Fitting Debris - White**
Client Sample Location: **East Crawlspace**
Sample Comments: Checked If Sample Not Analyzed ☐

White compressed chalky powder

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
No Asbestos Detected	1% Cellulose	96% Filler and Binder
	1% Synthetic	2% Perlite

Client Sample Number: **D-3** Lab Sample Number: **16-00100.0003**
Client Sample Description: **Paper Debris - White**
Client Sample Location: **Laundry Crawlspace**
Sample Comments: Checked If Sample Not Analyzed ☐

White fibrous papery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
25% Chrysotile Asbestos	35% Cellulose	40% Filler and Binder

Client Sample Number: **D-4** Lab Sample Number: **16-00100.0004**
Client Sample Description: **Paper Debris - Brown**
Client Sample Location: **Laundry Crawlspace**
Sample Comments: Checked If Sample Not Analyzed ☐

Off-white and tan fibrous papery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
3% Chrysotile Asbestos	92% Cellulose	5% Filler and Binder

(Sample results continued on next page.)

Sampled by: Bob Brownell **1/25/2016**
Received by: Regina Mirabal **1/27/2016**
Analyzed by: Cherie Zeledon **2/1/2016**

Rachel Melgoza
Reviewed 2/2/2016 by: Rachel Melgoza

NORTHERN INDUSTRIAL HYGIENE, INC.
Billings, MT • Helena, MT • Seattle, WA

215 SW 153rd Street Burien, WA 98166
OFFICE: (206) 988-1746 FAX: (206) 988-1978
NVLAP Lab Code: 200511-0

Bulk Asbestos Analysis Report

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101-
Project Location: *Old Livingston Hospital*

NIH Batch Number: **16-00100**
Client Job Number: **999-3019**
Turn Around Time: **5 Day**
Samples Analyzed: **6**

Client Sample Number: **D-5** Lab Sample Number: **16-00100.0005**
Client Sample Description: **Paper Debris - Brown/White**
Client Sample Location: **Dining Area Crawlspace**
Sample Comments: **Unable to determine layer order** Checked If Sample Not Analyzed ☐

Layer 1 **White fibrous papery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
45% Chrysotile Asbestos	15% Cellulose	40% Filler and Binder

Layer 2 **Off-white and tan fibrous papery material**

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
2% Chrysotile Asbestos	92% Cellulose	6% Filler and Binder

Client Sample Number: **D-6** Lab Sample Number: **16-00100.0006**
Client Sample Description: **Mag. Debris**
Client Sample Location: **Dining Area Crawlspace**
Sample Comments: Checked If Sample Not Analyzed ☐

Gray compressed grainy, gritty material with light gray compressed fibrous powdery material

Asbestos Fibrous Components:	Non-Asbestos Fibrous Components:	Non-Fibrous Components:
5% Amosite Asbestos	5% Cellulose	5% Aggregate
35% Chrysotile Asbestos		30% Filler and Binder
		20% Fine Grains

Comments: **Materials distinguishable but inseparable**

Sampled by: Bob Brownell **1/25/2016**
Received by: Regina Mirabal **1/27/2016**
Analyzed by: Cherie Zeledon **2/1/2016**

Rachel Melgoza
Reviewed 2/2/2016 by: Rachel Melgoza

Chain of Custody

NVLAP Lab Code 200511-0

Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101
Office Phone: (406) 245-7766
Cell Phone: (406) 647-5275
Email: bbrownell@bridgeband.com
Inspector/Contact: Bob Brownell

NIH Lab Batch ID:	16-00100
Project Name:	Old Livingston Hospital
Project Number:	999-3019
Date Samples Taken:	1/25/16
Type of Analysis:	PLM

Turnaround Time Requested	
2 Hour:	
Same Day:	
24 Hour:	
48 Hour:	
5 Day:	X
10 Day:	

For Lab Use Only
Sample(s) Size: ✓ Accepted ___ Rejected
Non-Conformance Memo: ___ Yes ___ No
Package Condition: ✓ Good ___ Damaged ___ Severe Damage

Page ____ of ____

NIH LAB ID	SAMPLE #	SAMPLE DESCRIPTION	SAMPLE LOCATION
1	D-1	Paper Debris (white)	East Crawlspace
2	D-2	Hard Fitting Debris (White)	East Crawlspace
3	D-3	Paper Debris (white)	Laundry Crawlspace
4	D-4	Paper Debris (brown)	Laundry Crawlspace
5	D-5	Paper Debris (brown + white)	Dining Area Crawlspace
6	D-6	Mag. Debris	Dining Area Crawlspace
	#-		

Special Instructions: Analyze Group Method - Stop at First Positive ~~Yes~~ (No)

Number of samples shipped this page: 6
Total number of samples shipped: 6

Relinquished By: Robert Brownell	Date: 1/26/16	Time: 11:00	Firm: NIH	
Received By:	Date: 1/27/16	Time: 10:05	Firm: NIH Bulk	
Analyzed By: Cheche Zaledon	Date: 2/1/16	Time: 1505	Firm: NIH Bulk Lab	

Revised 01/20/15 RIM

APPENDIX B

ASBESTOS SAMPLE COLLECTION REQUIREMENTS AND MATERIAL CATEGORY DESCRIPTIONS

SAMPLE COLLECTION REQUIREMENTS

Friable Surfacing Material

1) At least three bulk samples from each homogeneous material that is 1,000 square feet or less.
2) At least five bulk samples from each homogeneous material that is greater than 1,000 square feet but less than or equal to 5,000 square feet.
3) At least seven bulk samples from each homogeneous material that is greater than 5,000 square feet.

Thermal System Insulation

1) In a randomly distributed manner, at least three bulk samples from each homogeneous material of thermal system insulation that is not assumed to contain asbestos.
2) At least one bulk sample from each homogeneous material of patched thermal system insulation that was not assumed to be asbestos-containing material (ACBM).
3) In a manner sufficient to determine whether the material was ACBM or not ACBM, (generally three samples), bulk samples from each insulated mechanical system that was not assumed to be ACBM where cement or plaster was used on fittings such as tees, elbows, or valves.
4) Bulk samples were not collected from any homogeneous material where the inspector determined that the thermal system insulation is fiberglass, foam glass, rubber, or other non-asbestos-containing building material.

Miscellaneous Materials

1) If any other friable suspect homogeneous material was not assumed to be ACBM, three bulk samples were collected from each suspect material as established in the Administrative Rules of Montana (ARM 17.74.354), area of homogeneous friable miscellaneous material that was not assumed to be ACBM.

Non-friable suspected ACBM

1) If any non-friable suspect homogeneous ACBM was not assumed to be ACBM, three bulk samples were collected from each suspect materials as established in the Administrative Rules of Montana (ARM 17.74.354).

AHERA AND NESHAP CATEGORIES

Following receipt of the laboratory analysis, homogeneous ACBM were identified and the quantities determined. The materials were then categorized using NESHAP criteria and a general recommended response action was determined for each ACBM.

AHERA Categories

Category 1: Damaged or significantly damaged thermal system insulation ACM.
Category 2: Damaged friable surfacing ACM.
Category 3: Significantly damaged friable surfacing ACM.
Category 4: Damaged or significantly damaged friable miscellaneous ACM.
Category 5: ACBM with potential for damage.
Category 6: ACBM with potential for significant damage.
Category 7: Remaining friable ACBM or friable suspected ACBM.

NESHAP Categories

Category I is non-friable asbestos-containing materials including packings, gaskets, resilient floor covering and asphalt roofing products containing more than 1 percent asbestos. This category also includes pliable asbestos-containing sealants and mastics.

Category II is non-friable ACBM, excluding Category I non-friable ACBM, containing more than one percent asbestos. This category includes Transite ® (cement asbestos) products.

Regulated Asbestos-Containing Materials (RACM) are friable materials, Category I non-friable materials that will or may be subjected to sanding, grinding, cutting, or abrading and Category II non-friable materials that have a high probability of becoming or have become crumbled, pulverized, or reduced to powder by forces expected to act on the material in the course of demolition or renovation operations.

General Recommended Response Actions

Removal:	remove noted damaged ACBM;
Repair:	repair noted damaged ACBM;
Encapsulate:	encapsulate ACBM with a penetrating or bridging encapsulate;
Enclosure:	enclose ACBM by construction an air tight barrier;
O&M:	include material in a formal operations and maintenance program and maintain ACBM in a non-friable condition.

APPENDIX C

INSPECTOR ASBESTOS TRAINING CERTIFICATES

KEVIN B OLIVER

has met the requirements of Montana Administrative Rule 17.74.362 and/or 17.74.363 for accreditation in the following asbestos occupation(s) through the specified expiration date(s).

[redacted]-1368

Asbestos Inspector	01/07/2017
Management Planner	01/07/2017
Project Contractor/Supervisor	01/05/2017
Project Designer	01/06/2017

MT DEQ Asbestos Control Program

LOGAN SILVEIRA

has met the requirements of Montana Administrative Rule 17.74.362 and/or 17.74.363 for accreditation in the following asbestos occupation(s) through the specified expiration date(s).

[redacted]-4712

Asbestos Inspector	10/14/2016
Project Contractor/Supervisor	11/13/2016

MT DEQ Asbestos Control Program

ATTACHMENT D

EPA WAREHOUSE EQUIPMENT LIST

Equipment Check Out Log

Project Name: Livingston Memorial Hospital Taken By/Proj. Mgr: Natalie Quiet

Checked Out By: _____ Signature: _____

Date of Request: 4/13/2018 Date Needed: 4/13/2018 Projected Return: 4/20/2018

Pulled	Scanned	Item Description	Decal Id #	Qty Requested	Qty Out	Qty In	Date Returned	Scanned In
		gallon size baggies (12x12)		10				
		quart size baggies (8x8)		150				
		asbestos sampling kit		1				
		Nitrile gloves XL (Box)		1				
		Laser Distance Measurer		1				
		plastic scoops		5				
		p100 respirator filters (pack of two)		2				
		XRF Alpha (Lead-Based Paint Mode)		1				
		Headlamp W/Batteries		1				
		Wondermaker handle		1				
		Wondermaker Tubes		20				
		Ghost Wipes		20				
		#60 Sieve		1				
		Geopick (for Soil)		1				
		DI Water (spray bottle)		1				
		Paper Towels		1				
		Small Decon Brush		1				
		Trash Bag		2				